income families (shown in the two leftmost columns in the tables) accounted for 80.8 percent of Fannie Mae's units qualifying under the goal in 1996, rising to 83.6 percent in 2001. For Freddie Mac, very-low-income families accounted for 82.1 percent of units qualifying under the goal in 1996, rising to 84.4 percent in 2001. In contrast, mortgage purchases from low-income areas (shown in the first and third columns in the tables) accounted for 37.0 percent of Fannie Mae's units qualifying under the goal in 1996, compared to 35.5 percent in 2001. The corresponding percentages for Freddie Mac were 35.6 percent in 1996 and 35.5 percent in 2001. Thus given the definition of special affordable housing in terms of household and area income characteristics, both GSEs have consistently relied substantially more on low-income characteristics of households than low-income characteristics of census tracts to meet this goal.

h. The GSEs' Performance Relative to the Market

Section E.9 in Appendix A uses HMDA data and GSE loan-level data for home purchase mortgages on single-family-owner properties in metropolitan areas to compare the GSEs' performance in special affordable lending to the performance of depositories and other lenders in the conventional conforming market. (See Tables A.13 to A.16 in Appendix A.). There were two main findings with respect to the special affordable category. *First,* Freddie Mac and Fannie Mae have historically lagged depositories and the overall market in providing mortgage funds for special affordable borrowers. Between 1993 and 2002, 11.8 percent of Freddie Mac's mortgage purchases were for special affordable borrowers, 12.7 percent of Fannie Mae's purchases, 15.4 percent of loans originated by depositories, and 15.4 percent of loans originated in the conventional conforming market (without estimated B&C loans). For the recent years, the GSE-market comparisons are as follows:

Year	Feddie Mac (percent)	Fannie Mae (percent)	Market (w/o B&C) (percent)
1999	12.8	12.5	17.0
2000	14.7	13.3	16.8
2001	14.4	14.9	15.6
2002	15.8	16.3	16.3
1996–2002 (average)	12.8	13.5	16.0
1999–2002 (average)	14.5	14.4	16.4
2001–2002 (average)	15.1	15.6	16.0

During the period between 1999 and 2002, both GSEs' performance was at approximately 88 percent of the market—special affordable loans accounted for 14.4 percent of Fannie Mae's purchases, 14.5 percent of Freddie Mac's purchases, and 16.4 percent of loans originated in the conforming market.

Second, while both GSEs have improved their performance over the past few years, Fannie Mae has been made more progress than Freddie Mac in closing its gap with the market. During the first two years (2001 and 2002) of HUD's new housing goal targets, the average share of Fannie Mae's purchases going to special affordable loans was 15.6 percent, which was close to the market average of 16.0 percent. The share of Freddie Mac's purchases going to special affordable loans was 15.1 percent during this period.

Section G in Appendix A discusses the role of the GSEs both in the overall special affordable market and in the different segments (single-family owner, single-family rental, and multifamily rental) of the special affordable market. The GSEs' special affordable purchases accounted for 35 percent of all special affordable owner and rental units that were financed in the conventional conforming market between 1999 and 2002. The GSEs' 35-percent share of the special affordable market was two-thirds of their 49-percent share of the overall market. Even in the owner market, where the GSEs account for 57 percent of the market, their share of the special affordable market was only 49 percent during this period. While the GSEs improved their market shares during 2001 and 2002, this analysis shows that the GSEs have not been leading the single-family market in purchasing loans that qualify for the Special Affordable Goal. There is room and ample opportunities for the GSEs to improve their performance in purchasing affordable loans at the lower-income end of the market. Section C.3 of this appendix discusses a home purchase subgoal designed to place the GSEs in such a leadership position in the special affordable single-family-owner market.

Factor 3. National Housing Needs of Low-Income Families in Low-Income Areas and Very-Low-Income Families

This discussion concentrates on very-low-income families with the greatest needs. It complements Section C of Appendix A, which presents detailed analyses of housing problems and demographic trends for lower-income families which are relevant to the issue addressed in this part of Appendix C.

Data from the American Housing Survey demonstrate that housing problems and needs for affordable housing continue to be more pressing in the lowest-income categories than among moderate-income families, as established in HUD's analysis for the 1995 and 2000 Final Rules. Table C.6 displays figures on several types of housing problems—high housing costs relative to income, physical housing defects, and crowding—for both owners and renters. Figures are presented for households experiencing multiple (two or more) of these problems as well as households experiencing a severe degree of either cost burden or physical problems. Housing problems in 2001 continued to be much more frequent for the lowest-income groups.[10] Incidence of problems is shown for households in the income range covered by the special affordable goal, as well as for higher income households.

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[10] Tabulations of the 2001 American Housing Survey by HUD's Office of Policy Development and Research. The results in the table categorize renters reporting housing assistance as having no housing problems.

Table C.6

Incidence of Housing Problems by Household Income, 2001

	Household Income as a Percent of Area Median Income, 2001			
	0-60%	**61-80%**	**81-100%**	**>100%**
Renter Households (Thousands)				
Total	17,892	4,413	3,619	8,118
Rent Burden > 50% of income	6,238	112	77	27
31-50% of income	5,344	927	368	277
Severely Inadequate Housing	774	108	92	206
Moderately Inadequate	1,616	281	199	442
Crowded	1,151	206	121	196
Multiple Problems*	2,084	106	36	60
Priority Problems**	6,740	217	170	233
As Percent of Total				
Rent Burden > 50% of income	34.9%	2.5%	2.1%	0.3%
31-50% of income	29.9%	21.0%	10.2%	3.4%
Severely Inadequate Housing	4.3%	2.4%	2.6%	2.5%
Moderately Inadequate	9.0%	6.4%	5.5%	5.4%
Crowded	6.4%	4.7%	3.4%	2.4%
Multiple Problems*	11.6%	2.4%	1.0%	0.7%
Priority Problems**	37.7%	4.9%	4.7%	2.9%
Owner Households (Thousands)				
Total	18,432	7,510	7,631	38,792
Cost Burden > 50% of income	5,624	550	321	391
31-50% of income	4,208	1,814	1,517	2,446
Severely Inadequate Housing	389	102	127	336
Moderately Inadequate	874	260	179	694
Crowded	436	122	162	259
Multiple Problems*	821	139	104	80
Priority Problems**	5,908	636	449	728
As Percent of Total				
Cost Burden > 50% of income	30.5%	7.3%	4.2%	1.0%
31-50% of income	22.8%	24.2%	19.9%	6.3%
Severely Inadequate Housing	2.1%	1.4%	1.7%	0.9%
Moderately Inadequate	4.7%	3.5%	2.3%	1.8%
Crowded	2.4%	1.6%	2.1%	0.7%
Multiple Problems*	4.5%	1.8%	1.4%	0.2%
Priority Problems**	32.1%	8.5%	5.9%	1.9%

* Two or three of the following: housing costs > 30%, severe or moderate physical problems, and overcrowding.

** Housing costs > 50% of income or severely inadequate housing among unassisted households.

Note: Incomes of renter households are estimated based on rents, adjusted for number of bedrooms.

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This analysis shows that priority problems of severe cost burden or severely inadequate housing are noticeably concentrated among renters and owners with incomes below 60 percent of area median income: 30.5 percent of renter households and 34.9 percent of owner households had priority problems. In contrast, in the next higher income range, up to 80 percent of area median income, 2.5 percent of renter households and 7.3 percent of owner households had priority problems. The table demonstrates the significance of affordability problems: Sixty-five percent of very-low-income renter families had rent burden over 30 percent of income; 35 percent had rent burden over 50 percent of income. Thirteen percent had moderately or severely inadequate housing; 6 percent lived in crowded conditions, defined as more than one person per room.

Factor 4. The Ability of the Enterprises To Lead the Industry in Making Mortgage Credit Available for Low-Income and Very-Low-Income Families

The discussion of the ability of Fannie Mae and Freddie Mac to lead the industry in Section G of Appendix A is relevant to this factor—the GSEs' roles in the owner and rental markets, their role in establishing widely-applied underwriting standards, their role in the development of new technology for mortgage origination, their strong staff resources, and their financial strength. Additional analyses of the potential ability of the enterprises to lead the industry in the low- and very-low-income market appears below in Section D, which explains the Department's rationale for the home purchase subgoal for Special Affordable loans.

Factor 5. The Need To Maintain the Sound Financial Condition of the GSEs

HUD has undertaken a separate, detailed economic analysis of this final rule, which includes consideration of (a) the financial returns that the GSEs earn on special affordable loans and (b) the financial safety and soundness implications of the housing goals. Based on this economic analysis, HUD concludes that the housing goals in this final rule raise minimal, if any, safety and soundness concerns.

C. Determination of the Special Affordable Housing Goal

Several considerations, many of which are reviewed in Appendixes A and B and in previous sections of this Appendix, led to the determination of the Special Affordable Housing Goal, the multifamily special affordable subgoal, and the special affordable subgoal for home purchase loans on single-family-owner properties in metropolitan areas.

1. Severe Housing Problems

The data presented in Section C.3 demonstrate that housing problems and needs for affordable housing are much more pressing in the lowest-income categories than among moderate-income families. The high incidence of severe problems among the lowest-income renters reflects severe shortages of units affordable to those renters. At incomes below 60 percent of area median, 34.7 percent of renters and 21.6 percent of owners paid more than 50 percent of their income for housing. In this same income range, 65.6 percent of renters and 42.4 percent of owners paid more than 30 percent of their income for housing. In addition, 31.5 percent of renters and 23.8 percent of owners exhibited ''priority problems'', meaning housing costs over 50 percent of income or severely inadequate housing. Homeownership gaps and other disparities in the housing and mortgage markets discussed in Section H of Appendix A also apply to Special Affordable housing and mortgages.

2. GSE Performance and the Market

a. *The GSEs' Special Affordable Housing Goals Performance*

In the October 2000 rule, the special affordable goal was set at 20 percent for 2001–03. Effective on January 1, 2001, several changes in counting requirements came into effect for the special affordable goal, as follows: (a) ''Bonus points'' (double credit) for purchases of mortgages on small (5–50 unit) multifamily properties and, above a threshold level, mortgages on 2–4 unit owner-occupied properties; (b) a ''temporary adjustment factor'' (1.35 unit credit) for Freddie Mac's purchases of mortgages on large (more than 50 unit) multifamily properties; (c) changes in the treatment of missing data; (d) a procedure for the use of imputed or proxy rents for determining goal credit for multifamily mortgages; and (e) changes regarding the ''recycling'' of funds by loan originators. Fannie Mae's performance in 2001 was 21.6 percent and Freddie Mac's performance was 22.6 percent, thus both GSEs surpassed this higher goal.

Counting requirements (a) and (b) expired at the end of 2003 while (c)–(e) will remain in effect after that. If this counting approach—without the bonus points and the ''temporary adjustment factor''—had been in effect in 2000–2002, and the GSEs' had purchased the same mortgages that they actually did purchase in both years, then Fannie Mae's performance would have been 21.4 percent in 2000, 20.2 percent in 2001, and 19.9 percent in 2002. Freddie Mac's performance would have been 21.0 percent in 2000, 19.3 percent in 2001, and 18.6 percent in 2002. Fannie Mae would have surpassed the special affordable goal in both 2000 and 2001 while Freddie Mac would have surpassed the goal in 2000 and fallen short in 2001.

The above performance figures are for the special affordable goal defined in terms of 1990 Census geography. Switching to 2000 Census data slightly increases the coverage of special affordable goal, which increases the special affordable share of the GSEs' purchases by up to one percentage point. Based on 2000 Census geography, and excluding counting requirements (a) and (b), then Fannie Mae 's performance would have been 21.7 percent in 2000, 20.1 percent in 2001, and 19.4 percent in 2002. Freddie Mac's performance would have been 20.8 percent in 2000, 19.1 percent in 2001, and 17.8 percent in 2002.

b. Single-Family Market Comparisons in Metropolitan Areas

The Special Affordable Housing Goal is designed, in part, to ensure that the GSEs maintain a consistent focus on serving the very low-income portion of the housing market where housing needs are greatest. Section C compared the GSEs' performance in special affordable lending to the performance of depositories and other lenders in the conventional conforming market for single-family home loans. The analysis showed that while both GSEs have improved their performance, they have historically lagged depositories and the overall market in providing mortgage funds for very low-income and other special affordable borrowers. Between 1999 and 2002, special affordable borrowers accounted for 14.4 percent of the home loans purchased by Fannie Mae, 14.5 percent of Freddie Mac's purchases, 16.4 percent of home loans originated by depositories, and 16.4 percent of all home loans originated in the conventional conforming market (without B&C loans). Section C also noted that while both GSEs have improved their performance over the past few years, Fannie Mae has made more progress than Freddie Mac in closing its gap with the market. During the first two years (2001 and 2002) of HUD's new housing goal targets, the average share of Fannie Mae's purchases going to special affordable loans was 15.6 percent, which was close to the market average of 16.0 percent. The share of Freddie Mac's purchases going to special affordable loans was 15.1 percent during this period. (See Figure C.3.)

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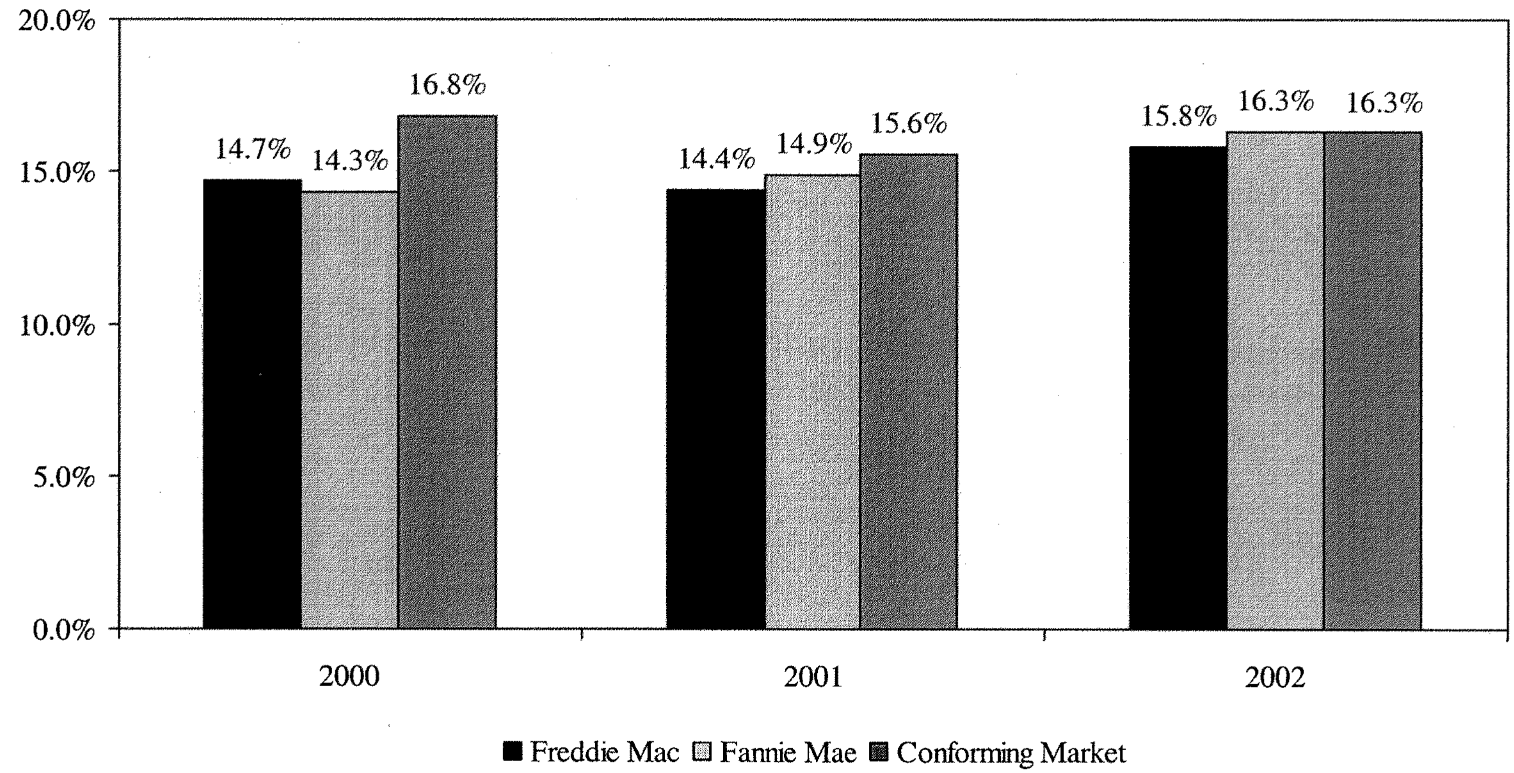
Figure C.3
Special Affordable Shares of Conventional Conforming Market Originations and GSE Purchases, 2000-2002



Source: Conforming market (without B&C loans) data are from 2000-2002 HMDA; GSE data are from loan-level data reported to HUD. Data are for single-family home purchase loans in metropolitan areas. See Table A.15 for further explanation.

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3. Ability To Lead the Single-Family Owner Market: A Special Affordable Sub Goal

The Secretary believes the GSEs can play a leadership role in the special affordable market. Thus, the Department is proposing to establish a subgoal of 17 percent for each GSE's purchases of home purchase loans for special affordable families in the single-family-owner market of metropolitan areas for 2005, rising to 18 percent in 2006, and 19 percent in both 2007 and 2008. The purpose of this subgoal is to encourage the GSEs to improve their purchases of mortgages for very-low-income and minority first-time homebuyers who are expected to enter the housing market over the next few years. If the GSEs meet this goal, they will be leading the primary market by approximately one-half percentage point in 2005 and 2.5 percentage points by 2007 and 2008, based on the income characteristics of home purchase loans reported in HMDA. HMDA data show that special affordable families accounted for an average of 16.4 percent of single-family-owner loans originated in the conventional conforming market of metropolitan areas between 1999 and 2002—the special affordable market share was 16.0 percent for both the longer 1996–2002 period and the shorter 2001–2002 period. Loans in the B&C portion of the subprime market are not included in these averages. As explained in Appendix D, HUD also projected special affordable shares for the market for 1999 to 2002 using the new 2000 Census geography and the new OMB specifications. For special affordable loans, the 1999–2002 market average using these projected data was also 16.4 percent.

To reach the proposed 17-percent subgoal for 2005, both GSEs will have to improve their performance—Fannie Mae by 2.6 percentage points over its average performance of 14.4 percent between 1999 and 2002, by 1.4 percentage points over its average performance of 15.6 percent during 2001 and 2002, and by 0.7 percentage point over its 16.3 percent performance in 2002; and Freddie Mac by 2.5 percentage points over its average performance of 14.5 percent between 1999 and 2002, by 1.9 percentage points over its average performance of 15.1 percent during 2001 and 2002, and by 1.2 percentage point over its 15.8 percent performance in 2002. By 2007–2008 the required increases in subgoal performance over past performance will be 2 percentage points higher than the increases cited in the preceding sentence. For example, Fannie Mae would have to increase its performance by 2.7 percentage points over its 16.3 percent performance in 2002; and Freddie Mac would have to increase its performance by 3.2 percentage points over its 15.8 percent performance in 2002. The special affordable performances of Fannie Mae and Freddie Mac were also projected to take into account the new 2000 Census geography and the new OMB specifications. On average, the results with the new data were similar to the old data, but the differential was higher during 2002. For home purchase loans, the 1999–2002 average performance for Fannie Mae was 14.3 percent with the projected data, versus 14.4 percent with the historical data; the largest difference was in 2002, when Fannie Mae's performance was 15.8 percent with the projected data, compared with 16.3 percent with the historical data. The 1999–2002 average performance for Freddie Mac was 14.1 percent with the projected data, versus 14.5 percent with the historical data; the largest difference was also in 2002, when Freddie Mac's performance was 15.1 percent with the projected data, compared with 15.8 percent with the historical data. Thus, the increases in each GSE's performance needed to meet the proposed special affordable home purchase subgoal in 2005–08 will be slightly higher than those noted above.

The approach taken is for the GSEs to obtain their leadership position by staged increases in the special affordable subgoal; this will enable the GSEs to take new initiatives in a correspondingly staged manner to achieve the new subgoal each year. Thus, the increases in the special affordable subgoal are sequenced so that the GSEs can gain experience as they improve and move toward the new higher subgoal targets.

The subgoal applies only to the GSEs' purchases in metropolitan areas because the HMDA-based market benchmark is only available for metropolitan areas. HMDA data for non-metropolitan counties are not reliable enough to serve as a market benchmark. The Department is also setting home purchase subgoals for the other two goals-qualifying categories, as explained in Appendices A and B. Sections E.9 and G of Appendix A provide additional information on the opportunities for an enhanced GSE role in the special affordable segment of the home purchase market and on the ability of the GSEs to lead that market.

The preamble and Appendix A discuss in some detail the factors that the Department considered when setting the subgoal for low- and moderate-income loans. Several of the considerations were general in nature—for example, related to the GSEs' overall ability to lead the single-family-owner market—while others were specific to the low-mod subgoal. Because the reader can refer to Appendix A, this appendix provides a briefer discussion of the more general factors. The specific considerations that led to the subgoal for special affordable loans can be organized around the following four topics:

(1) *The GSEs have the ability to lead the market.* As discussed in Appendix A, the GSEs have the ability to lead the primary market for single-family-owner loans, which is their ''bread-and-butter'' business. Both GSEs have been dominant players in the home purchase market for years, funding 57 percent of the single-family-owner mortgages financed between 1999 and 2002. Through their many new product offerings and their various partnership initiatives, the GSEs have shown that they have the capacity to reach out to very-low-income and other special affordable borrowers. They also have the staff expertise and financial resources to make the extra effort to lead the primary market in funding single-family-owner mortgages for special affordable borrowers.

(2) *The GSEs have lagged the market.* Even though they have the ability to lead the market, they have not done so. While the GSEs have significantly improved their performance, according to numerous studies by the Department and independent researchers, they have historically lagged the primary market in providing funds for special affordable borrowers (see above GSE-market comparisons). The type of improvement needed to meet this new special affordable subgoal was demonstrated by Fannie Mae during 2001 and 2002. Between 2000 and 2001, special affordable loans declined as a percentage of Freddie Mac's purchases (from 14.7 to 14.4 percent) and as a percentage of primary market originations (from 16.8 to 15.6 percent), but they increased as a percentage of Fannie Mae's purchases (from 13.3 to 14.9 percent). During 2002, Fannie Mae further increased its special affordable share (from 14.9 percent tin 2001 to 16.3 percent in 2002), placing it at the market level. This subgoal is designed to encourage Fannie Mae as well as Freddie Mac to lead the special affordable market.

(3) *Disparities in Homeownership and Credit Access Remain.* There remain troublesome disparities in our housing and mortgage markets, even after the ''revolution in affordable lending'' and the growth in homeownership that has taken place since the mid-1990s. The homeownership rate for African-American and Hispanic households remains 25 percentage points below that of white households. Minority families face many barriers in the mortgage market, such as lack of capital for down payment and lack of access to mainstream lenders (see above). Immigrants and minorities—many of whose very-low-income levels will qualify them as special affordable—are projected to account for almost two-thirds of the growth in the number of new households over the next ten years. As emphasized in Appendix A, changing population demographics will result in a need for the primary and secondary mortgage markets to meet nontraditional credit needs, respond to diverse housing preferences, and overcome information and other barriers that many immigrants and minorities face. The GSEs have to increase their efforts in helping special affordable families—but so far they have played a surprisingly small role in serving minority first-time homebuyers. It is estimated that the GSEs accounted for 46.5 percent of all (both government and conventional) home loans originated between 1999 and 2001; however, they accounted for only 14.3 percent of home loans originated for African-American and Hispanic first-time homebuyers. A subgoal for special affordable home purchase loans should increase the GSEs' efforts in important sub-markets such as the one for minority first-time homebuyers.

(4) *There are ample opportunities for the GSEs to improve their performance.* Special affordable mortgages are available for the GSEs to purchase, which means they can improve their performance and lead the primary market in purchasing loans for these very-low-income borrowers. Sections B, C, and I of Appendix A and Section H of Appendix D explain that the special affordable lending market has shown an underlying strength over the past few years that is unlikely to vanish (without a

significant increase in interest rates or a decline in the economy). The special affordable share of the home purchase market has averaged 16.0 percent since 1996 and annually has ranged from 15.0 percent to 17.0 percent. Second, the market share data reported in Table A.30 of Appendix A demonstrate that there are newly-originated loans available each year for the GSEs to purchase. The GSEs' purchases of single-family owner loans represented 57 percent of all single-family-owner loans originated between 1999 and 2002, compared with 49 percent of the special affordable loans that were originated during this period. Thus, half of the special affordable conforming market is not touched by the GSEs. As noted above, the situation is even more extreme for special sub-markets such the minority first-time homebuyer market where the GSEs have only a minimal presence. Between 1999 and 2001, the GSEs purchased only 33 percent of conventional conforming loans originated for minority first-time homebuyers, even though they purchased 57 percent of all home loans originated in the conventional conforming market during that period. But also important, the GSEs' purchases under the subgoal are not limited to new mortgages that are originated in the current calendar year. The GSEs can purchase loans from the substantial, existing stock of special affordable loans held in lenders' portfolios, after these loans have seasoned and the GSEs have had the opportunity to observe their payment performance. In fact, based on Fannie Mae's recent experience, the purchase of seasoned loans appears to be one useful strategy for purchasing goals-qualifying loans.

To summarize, although single-family-owner mortgages comprise the ''bread-and-butter'' of their business, the GSEs have lagged behind the primary market in financing special affordable loans. For the reasons given above, the Secretary believes that the GSEs can do more to raise the special affordable shares of the home loans they purchase on single-family-owner properties. This can be accomplished by building on efforts that the enterprises have already started, including their new affordable lending products aimed at special groups such as first-time homebuyers, their many partnership efforts, their outreach to inner city neighborhoods, their incorporation of greater flexibility into their underwriting guidelines, and their purchases of seasoned CRA loans. A wide variety of quantitative and qualitative indicators indicate that the GSEs' have the resources and financial strength to improve their special affordable performance enough to lead the market.

4. Size of the Overall Special Affordable Mortgage Market

As detailed in Appendix D, single-family and multifamily special affordable mortgages are estimated to account for 24–28 percent of the dwelling units financed by conventional conforming mortgages; in estimating the size of the market, HUD used alternative assumptions about future economic and market affordability conditions that were less favorable than those that existed over the past several years. Between 1999 and 2002, the special affordable market averaged 28 percent. HUD is well aware of the volatility of mortgage markets and the possible impacts on the GSEs' ability to meet the housing goals. Should conditions change such that the goals are no longer reasonable or feasible, the Secretary has the authority to revise the goals.

5. The Special Affordable Housing Goal for 2005–2008

The proposed Special Affordable Housing Goal for 2005 is 22 percent of eligible purchases, a two percentage point increase over the current goal of 20 percent, with the proposed goal rising to 24 percent in 2006, 26 percent in 2007, and 28 percent in 2008. The bonus points for small multifamily properties and owner-occupied 2–4 units, as well as Freddie Mac's Temporary Adjustment Factor, will no longer be in effect for goal counting purposes. It is recognized that neither GSE would have met the 22-percent target in the past three years. Under the new counting rules, Fannie Mae's special affordable performance is estimated to have been 18.6 percent in 1999, 21.7 percent in 2000, 20.1 percent in 2001, and 19.4 percent in 2002—Fannie Mae would have to increase its performance in 2005 by 2.0 percentage points over its average (unweighted) performance of 20.0 percent over these last four years. By 2008 this increase relative to average 1999–2002 performance would be 8.0 percentage points. Freddie Mac's performance is projected to have been 17.4 percent in 1999, 20.8 percent in 2000, 19.1 percent in 2001, and 17.8 percent in 2002—Freddie Mac would have to increase its performance in 2005 by 3.2 percentage points over its average (unweighted) performance of 18.8 percent over these last four years. By 2008 this increase relative to average 1999–2002 performance would be 9.2 percentage points. As explained in Appendix D, the Special Affordable market averaged 28 percent between 1999 and 2002. Thus, the GSEs should be able to improve their performance enough to meet the proposed targets of 22 percent in 2005, 24 percent in 2006, 26 percent in 2007, and 28 percent in 2008.

The objective of HUD's proposed Special Affordable Goal is to bring the GSEs' performance to the upper end of HUD's market range estimate for this goal (24–28 percent), consistent with the statutory criterion that HUD should consider the GSEs' ability to lead the market for each Goal. To enable the GSEs to achieve this leadership, the Department is proposing modest increases in the Special Affordable Goal for 2005 which will increase further, year-by-year through 2008, to achieve the ultimate objective for the GSEs to lead the market under a range of foreseeable economic circumstances by 2008. Such a program of staged increases is consistent with the statutory requirement that HUD consider the past performance of the GSEs in setting the Goals. Staged annual increases in the Special Affordable Goal will provide the enterprises with opportunity to adjust their business models and prudently try out business strategies, so as to meet the required 2008 level without compromising other business objectives and requirements.

Section C compared the GSEs' role in the overall market with their role in the special affordable market. The GSEs' purchases provided financing for 23,580,594 dwelling units, which represented 49 percent of the 48,270,415 single-family and multifamily units that were financed in the conventional conforming market between 1999 and 2002. However, in the special affordable part of the market, the 4,595,201 units that were financed by GSE purchases represented only 35 percent of the 13,232,549 dwelling units that were financed in the market. Thus, there appears to ample room for the GSEs to improve their performance in the special affordable market. In addition, there are several market segments (*e.g.*, first-time homebuyers) that would benefit from a greater secondary market role by the GSEs, and special affordable borrowers are concentrated these markets.

6. Multifamily Special Affordable Subgoals

Based on the GSEs' past performance on the special affordable multifamily subgoals, and on the outlook for the multifamily mortgage market, HUD is proposing that these subgoals be retained and increased for the 2005–2008 period. Unlike the overall goals, which are expressed in terms of minimum goal-qualifying percentages of total units financed, these subgoals for 2001–03 and in prior years have been expressed in terms of minimum dollar volumes of goal-qualifying multifamily mortgage purchases. Specifically, each GSE's special affordable multifamily subgoal is currently equal to 1.0 percent of its average total (single-family plus multifamily) mortgage volume over the 1997–99 period. Under this formulation, in October 2000 the subgoals were set at $2.85 billion per year for Fannie Mae and $2.11 billion per year for Freddie Mac, in each of calendar years 2001 through 2003. These represented increases from the goals for 1996–2000, which were $1.29 billion annually for Fannie Mae and $0.99 billion annually for Freddie Mac. These subgoals are also in effect for 2004.

HUD's Determination. The multifamily mortgage market and both GSEs' multifamily transactions volume grew significantly over the 1993–2001 period, indicating that both enterprises have provided increasing support for the multifamily market, and that they have the ability to continue to provide further support for the market.

Specifically, Fannie Mae's total eligible multifamily mortgage purchase volume increased from $4.6 billion in 1993 to $12.5 billion in 1998, and then jumped sharply to $18.7 billion in 2001 and $18.3 billion in 2002. Its special affordable multifamily mortgage purchases followed a similar path, rising from $1.7 billion in 1993 to $3.5 billion in 1998 and $4.1 billion in 1999, and also jumping sharply to $7.4 billion in 2001 and $7.6 billion in 2002. As a result of its strong performance, Fannie Mae's purchases have been at least twice its minimum subgoal in every year since 1997—247 percent of the subgoal in that year, 274 percent in 1998, 315 percent in 1999, 294 percent in 2000, and, under the new higher subgoal level, 258 percent in 2001, and 266 percent in 2002.

Freddie Mac's total eligible multifamily mortgage purchase volume increased even more sharply, from $0.2 billion in 1993 to $6.6 billion in 1998, and then jumped sharply in 2001 to $11.8 billion and $13.3 billion in 2002. Its special affordable multifamily mortgage purchases followed a similar path, rising from $0.1 billion in 1993 to $2.7 billion in 1998, and also jumping sharply to $4.6 billion in 2001 and $5.2 billion in 2002. As a result of its strong performance, Freddie Mac's purchases have also been at least twice its minimum subgoal in every year since 1998—272 percent of the subgoal in that year, 229 percent in 1999, 243 percent in 2000, and, under the new higher subgoal level, 220 percent in 2001, and 247 percent in 2002.

The Special Affordable Housing Multifamily Subgoals set forth in this proposed rule are reasonable and appropriate based on the Department's analysis of this market. The Department's decision to retain the multifamily subgoal is based on the fact that HUD's analysis indicates that multifamily housing still serves the housing needs of lower-income families and families in low-income areas to a greater extent than single-family housing. By retaining the multifamily subgoal, the Department ensures that the GSEs continue their activity in this market, and that they achieve at least a minimum level of special affordable multifamily mortgage purchases that are affordable to lower-income families. The Department proposes to establish each GSE's special affordable multifamily subgoal as 1.0 percent of its average annual dollar volume of total (single-family and multifamily) mortgage purchases over the 2000–2002 period. In dollar terms, the Department's proposal is $5.49 billion per year in special affordable multifamily mortgage purchases for Fannie Mae, and $3.92 billion per year in special affordable multifamily mortgage purchases for Freddie Mac. These subgoals would be less than actual special affordable multifamily mortgage purchase volume in 2001 and 2002 for both GSEs; thus the Department believes that they would be feasible for the 2005–2008 period.

7. Conclusion

HUD has determined that the Special Affordable Housing Goal in this proposed rule addresses national housing needs within the income categories specified for this goal, while accounting for the GSEs' past performance in purchasing mortgages meeting the needs of very-low-income families and low-income families in low-income areas. HUD has also considered the size of the conventional mortgage market serving very-low-income families and low-income families in low-income areas. Moreover, HUD has considered the GSEs' ability to lead the industry as well as their financial condition. HUD has determined that a Special Affordable Housing Goal of 22 percent in 2005, 24 percent in 2006, 26 percent in-2007, and 28 percent in 2008 is both necessary and achievable. HUD has also determined that a multifamily special affordable subgoal for 2005–2008 set at 1.0 percent of the average of each GSE's respective dollar volume of combined (single-family and multifamily) 1999–2001 mortgage purchases in is both necessary and achievable. Finally, HUD is proposing to establish a subgoal of 17 percent for the GSEs' purchases of single-family-owner mortgages that qualify for the special affordable goal and are originated in metropolitan areas, for 2005, with this subgoal rising to 18 percent in 2006, and 19 percent in both 2007 and 2008. The Secretary has considered the GSEs' ability to lead the industry as well as the GSEs' financial condition. The Secretary has determined that the proposed goals, the proposed multifamily subgoals, and the proposed single-family-owner subgoals are necessary and appropriate.

Appendix D—Estimating the Size of the Conventional Conforming Market for Each Housing Goal

A. Introduction

In establishing the three housing goals, the Secretary is required to assess, among a number of factors, the size of the conventional market for each goal. This appendix explains HUD's methodology for estimating the size of the conventional market for each of the three housing goals. Following this overview, Section B summarizes the main components of HUD's market-share model and identifies those parameters that have a large effect on the relative market shares. Sections C and D discuss two particularly important market parameters, the size of the multifamily market and the share of the single-family mortgage market accounted for by single-family rental properties. Section E provides a more systematic presentation of the model's equations and main assumptions. Sections F, G, and H report HUD's estimates for the Low- and Moderate-Income Goal, the Underserved Areas Goal, and the Special Affordable Housing Goal, respectively.

In developing this rule, HUD has followed the same basic approach that it followed in the last two GSE rules. HUD has carefully reviewed existing information on mortgage activity in order to understand the weakness of various data sources and has conducted sensitivity analyses to show the effects of alternative parameter assumptions. HUD is well aware of uncertainties with some of the data and much of this appendix is spent discussing the effects of alternative assumptions about data parameters and presenting the results of an extensive set of sensitivity analyses.

In an earlier critique of HUD's market share model, Blackley and Follain (1995, 1996) concluded that conceptually HUD had chosen a reasonable approach to determining the size of the mortgage market that qualifies for each of the three housing goals.[1] Blackley and Follain correctly note that the challenge lies in getting accurate estimates of the model's parameters. In their comments on the 2000 Proposed GSE Rule, both Fannie Mae and Freddie Mac stated that HUD's market share model (outlined in Section B below) was a reasonable approach for estimating the goals-qualifying (low-mod, special affordable, and underserved areas) shares of the mortgage market. Freddie Mac stated:

We believe the Department takes the correct approach in the Proposed Rule by examining several different data sets, using alternative methodologies, and conducting sensitivity analysis. We applaud the Department's general approach for addressing the empirical challenges.[2]

Similarly, Fannie Mae stated that "HUD has developed a reasonable model for assessing the size of the affordable housing market".[3]

However, both GSEs have criticized HUD's implementation of its market methodology. Their major criticisms and HUD's responses to their criticisms can be found in Section B of Appendix D of the 2000 Final Rule. HUD recognizes that there is no single, perfect data set for estimating the size of the affordable lending market and that available data bases on different sectors of the market must be combined in order to implement its market share model (as outlined in Section B below). As this appendix will show, HUD has carefully combined various mortgage market data bases in a manner which draws on the strength of each in order to implement its market methodology and to arrive at a reasonable range of estimates for the three goals-qualifying shares of the mortgage market. In this appendix, HUD demonstrates the robustness of its market estimates by reporting the results of numerous sensitivity analyses that examine a range of assumptions about the relative importance of the rental and owner markets and the goals-qualifying shares of the owner portion of the mortgage market.

This appendix reviews in some detail HUD's efforts to combine information from several mortgage market data bases to obtain reasonable values for the model's parameters. The next section provides an overview of HUD's market share model.

B. Overview of HUD's Market Share Methodology [4]

1. Definition of Market Share

The size of the market for each housing goal is one of the factors that the Secretary is required to consider when setting the level

[1] Dixie M. Blackley and James R. Follain, "A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Housing Enterprises," unpublished report prepared for Office of Policy Development and Research, Department of Housing and Urban Development, October 1995; and "HUD's Market Share Methodology and its Housing Goals for the Government Sponsored Enterprises," unpublished paper, March 1996.

[2] See Freddie Mac, "Comments on Estimating the Size of the Conventional Conforming Market for Each Housing Goal: Appendix III to the Comments of the Federal Home Loan Mortgage Corporation on HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)", May 8, 2000, page 1.

[3] See Fannie Mae, "Fannie Mae's Comments on HUD's Regulation of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)", May 8, 2000, page 53.

[4] Readers not interested in this overview may want to proceed to Section C, which begins the market analysis by examining the size of the multifamily market.

of each housing goal.[5] Using the Low- and Moderate-Income Housing Goal as an example, the market share in a particular year is defined as follows:

Low- and Moderate-Income Share of Market: The number of dwelling units financed by the primary mortgage market in a particular calendar year that are occupied by (or affordable to, in the case of rental units) families with incomes equal to or less than the area median income *divided by* the total number of dwelling units financed in the conforming conventional primary mortgage market.

There are three important aspects to this definition. First, the market is defined in terms of ''dwelling units'' rather than, for example, ''value of mortgages'' or ''number of properties.'' Second, the units are ''financed'' units rather than the entire stock of all mortgaged dwelling units; that is, the market-share concept is based on the mortgage *flow* in a particular year, which will be smaller than total outstanding mortgage debt. Third, the low- and moderate-income market is expressed relative to the overall conforming conventional market, which is the relevant market for the GSEs.[6] The low- and moderate-income market is defined as a percentage of the conforming market; this percentage approach maintains consistency with the method for computing each GSE's performance under the Low- and Moderate-Income Goal (that is, the number of low- and moderate-income dwelling units financed by GSE mortgage purchases relative to the overall number of dwelling units financed by GSE mortgage purchases).

2. Three-Step Procedure

Ideally, computing the low- and moderate-income market share would be straightforward, consisting of three steps:

Step 1: Projecting the market shares of the four major property types included in the conventional conforming mortgage market, *i.e.*—

(a) Single-family owner-occupied dwelling units (SF–O units);

(b) Rental units in 2–4 unit properties where the owner occupies one unit (SF 2–4 units);[7]

(c) Rental units in one-to-four unit investor-owned properties (SF Investor units); and,

(d) Rental units in multifamily (5 or more units) properties (MF units).[8]

Step 2: Projecting the ''goal percentage'' for each of the above four property types (for example, the ''Low- and Moderate-Income Goal percentage for single-family owner-occupied properties'' is the percentage of those dwelling units financed by mortgages in a particular year that are occupied by households with incomes below the area median).

Step 3: Multiplying the four percentages in (2) by their corresponding market shares in (1), and summing the results to arrive at an estimate of the overall share of dwelling units financed by mortgages that are occupied by low- and moderate-income families.

The four property types are analyzed separately because of their differences in low- and moderate-income occupancy. Rental properties have substantially higher percentages of low- and moderate-income occupants than owner-occupied properties. This can be seen in the top portion of Table D.1, which illustrates Step 3's basic formula for calculating the size of the low- and moderate-income market.[9] In this example, low- and moderate-income dwelling units are estimated to account for 53.9 percent of the total number of dwelling units financed in the conforming mortgage market.

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[5] Sections 1332(b)(4), 1333(a)(2), and 1334(b)(4).

[6] So-called ''jumbo'' mortgages, greater than $300,700 in 2002 for 1-unit properties, are excluded in defining the conforming market. There is some overlap of loans eligible for purchase by the GSEs with loans insured by the FHA and guaranteed by the Veterans Administration.

[7] The owner of the SF 2–4 property is counted in (a).

[8] Property types (b), (c), and (d) consist of rental units. Property types (b) and (c) must sometimes be combined due to data limitations; in this case, they are referred to as ''single-family rental units'' (SF–R units).

[9] The property shares and low-mod percentages reported here are based on one set of model assumptions; other sets of assumptions are discussed in Section E.

Table D.1

Illustration of Market Share Calculations

Property Type	Low- and Moderate-Income Market (Step 1) Share of Market (Percent)	(Step 2) Low-Mod Share (Percent)	(Step 3) Multiply (1) x (2) (Percent)
(a) SF-Owner	72.2	40.0	28.9
(b) SF-2-4 Rental	2.0	90.0	1.8
(c) SF Investor	10.8	90.0	9.7
(d) MF	15.0	90.0	13.5
Total Low-Mod Market	100.0		53.9

Property Type	Underserved Areas Market[1] (Step 1) Share of Market (Percent)	(Step 2) Underserved Areas Share (Percent)	(Step 3) Multiply (1) x (2) (Percent)
(a) SF-Owner	72.2	26.0	18.8
(b) SF-2-4 Rental	2.0	42.5	0.9
(c) SF Investor	10.8	42.5	4.6
(d) MF	15.0	48.0	7.2
Total Underserved Areas Market	100.0		31.4

[1] This example assumes a 1990-Census-based definition of underserved areas. As discussed in section G, underserved areas in terms of 2000 Census geography increases the "underserved area shares" in step 2 by about six percentage points.

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To examine the other housing goals, the ''goal percentages'' in Step 2 would be changed and the new ''goal percentages'' would be multiplied by Step 1's property distribution, which remains constant. For example, the Underserved Areas Goal [10] would be derived as illustrated in the bottom portion of Table D.1. In this example, units eligible under the Underserved Areas Goal are estimated to account for 31.4 percent of the total number of dwelling units financed in the conforming mortgage market.[11]

3. Data Issues

Unfortunately, complete and consistent mortgage data are not readily available for carrying out the above three steps. A single data set for calculating either the property shares or the housing goal percentages does not exist. However, there are several major data bases that provide a wealth of useful information on the mortgage market. HUD combined information from the following sources: the Home Mortgage Disclosure Act (HMDA) reports, the American Housing Survey (AHS), HUD's Survey of Mortgage Lending Activity (SMLA), Property Owners and Managers Survey (POMS) and the Census Bureau's Residential Finance Survey (RFS). In addition, information on the mortgage market was obtained from the Mortgage Bankers Association, Fannie Mae, Freddie Mac and other organizations.

Property Shares. To derive the property shares, HUD started with forecasts of single-family mortgage originations (expressed in dollars). These forecasts, which are available from the GSEs and industry groups such as the Mortgage Bankers Association, do not provide information on conforming mortgages, on owner versus renter mortgages, or on the number of units financed. Thus, to estimate the number of single-family units financed in the conforming conventional market, HUD had to project certain market parameters based on its judgment about the reliability of different data sources. Sections D and E report HUD's findings related to the single-family market.

Total market originations are obtained by adding multifamily originations to the single-family estimate. Because of the wide range of estimates available, the size of the multifamily mortgage market turned out to be one of the most controversial issues raised during the initial rule-making process during 1995; this was also an issue that the GSEs focused on in their comments on the 2000 proposed rule. Because most renters qualify under the Low- and Moderate-Income Goal, the chosen market size for multifamily can have a substantial effect on the overall estimate of the low- and moderate-income market (as well as on the estimate of the special affordable market). Thus, it is important to consider estimates of the size of the multifamily market in some detail, as Section C does. In addition, given the uncertainty surrounding estimates of the multifamily mortgage market, it is important to consider a range of market estimates, as Sections F–H do.

Goal Percentages. To derive the goal percentages for each property type, HUD relied heavily on HMDA, AHS, and POMS data. For single-family-owner originations, HMDA provides comprehensive information on borrower incomes and census tract locations for metropolitan areas. Unfortunately, it provides no information on the incomes of renters living in mortgaged properties (either single-family or multifamily) or on the rents (and therefore the affordability) of rental units in mortgaged properties. The AHS, however, does provide a wealth of information on rents and the affordability of the outstanding stock of single-family and multifamily rental properties. An important issue here concerns whether rent data for the stock of rental properties can serve as a proxy for rents on newly-mortgaged rental properties. During the 2000 rule-making process, POMS data were used to examine the rents of newly-mortgaged rental properties; thus, the POMS data supplements the AHS data. The data base issues as well as other technical issues related to the goal percentages (such as the need to consider a range of mortgage market environments) are discussed in Sections F, G, and H, which present the market share estimates for the Low- and Moderate-Income Goal, the Underserved Areas Goal, and the Special Affordable Goal, respectively.

4. Conclusions

HUD is using the same basic methodology for estimating market shares that it used in 1995 and 2000. As demonstrated in the remainder of this appendix, HUD has attempted to reduce the range of uncertainty around its market estimates by carefully reviewing all known major mortgage data sources and by conducting numerous sensitivity analyses to show the effects of alternative assumptions. Sections C, D, and E report findings related to the property share distributions called for in Step 1, while Sections F, G, and H report findings related to the goal-specific market parameters called for in Step 2. These latter sections also report the overall market estimates for each housing goal calculated in Step 3.

In considering the levels of the goals, HUD carefully examined past comments by the GSEs and others on the methodology used to establish the market share for each of the goals. Based on that thorough evaluation, as well as HUD's additional analysis for this Proposed Rule, HUD concludes that its basic methodology is a reasonable and valid approach to estimating market shares. As in the past, HUD recognizes the uncertainty regarding some of these estimates, which has led the Department to undertake a number of sensitivity and other analyses to reduce this uncertainty and also to provide a range of market estimates (rather than precise point estimates) for each of the housing goals.

C. Size of the Conventional Multifamily Mortgage Market [12]

This section provides estimates of (a) the annual dollar volume of conventional multifamily mortgage originations and (b) the annual average loan amount per unit financed. The estimates build on research reported in the Final Rule on HUD's Regulation of Fannie Mae and Freddie Mac as published in the **Federal Register** on October 31, 2000, especially in Appendix D. That material from the 2000 Rule will not be repeated here but will be referenced or summarized where appropriate.

The section uses the information on dollar volume of multifamily originations and average loan amounts to estimate the number of multifamily units financed each year as a *percentage share* of the total (both single-family and multifamily) number of dwelling units financed each year; the years covered include 1991 to 2002. This percentage share, called the ''multifamily mix'', is an important parameter in HUD's projection model of the mortgage market for 2005–08.

Estimating this ''multifamily mix'' is important because relative to its share of the overall housing market, the multifamily rental sector has disproportionate importance for the housing goals established for Fannie Mae and Freddie Mac. This is because most multifamily rental units are occupied by households with low or moderate incomes. In 2001, for example, Freddie Mac purchased mortgages on approximately 3.5 million housing units, of which only 12 percent were multifamily rental units. However, of Freddie Mac's purchases qualifying as mortgages on low- and moderate-income housing, fully 25 percent of the units financed were multifamily rental units. Fannie Mae's experience is similar. Ten percent of all housing units on which mortgages were purchased in 2001 were multifamily rental units, but 21 percent of the units with qualifying mortgages were multifamily rentals.

The methods used in the 2000 Rule for estimating the size of the multifamily mortgage market and related variables were the product of extensive research by HUD and review by interested parties. The approach here is first to extend those estimates through 2002 using the same methods as in the 2000 Rule, and then to present alternative methods, along with commentary.

1. Data Sources

The data sources available for estimating the size of the multifamily mortgage market are more limited in scope and timeliness than was the case for the 2000 Rule. Among the key sources described in detail in the 2000 Rule, the following are now less useful:

Survey of Mortgage Lending Activity. This survey has been discontinued; estimates are available only through 1997.

Residential Finance Survey: The 1991 Residential Finance Survey (RFS) is now 13 years out of date.

Urban Institute Statistical Model: This model, developed in 1995 and calibrated

[10] This goal will be referred to as the ''Underserved Areas Goal''.

[11] The example in Table D.1 is based on 1990 Census tract geography. As explained in Section G, switching to 2000 Census tract geography (scheduled for 2005) increases the underserved areas market share by approximately five percentage points.

[12] This section is based on analysis by Jack Goodman under contract with the Urban Institute.

using data from 1975–1990, is now even further removed from its calibration period and probably captures current market conditions less well.

Estimates from the GSEs: As part of their comments on the proposed 2000 Rule, Fannie Mae and Freddie Mac shared with HUD their own estimates of the size of the multifamily mortgage market.

Fortunately, several key sources are available with the timeliness and quality comparable to the sources used during development of the 2000 Rule. These sources are: the Home Mortgage Disclosure Act (HMDA); activity reports submitted to HUD and the Office of Federal Enterprise Oversight (OFHEO) by Fannie Mae and Freddie Mac; non-GSE mortgage-backed security issuance from the Commercial Mortgage Alert database; and multifamily mortgage activity by life insurance companies, as estimated by the American Council of Life Insurers (ACLI). For background information on each of these sources, readers are referred to Appendix D of the 2000 Rule.

2. Estimates Based on ''HUD New'' Methodology

In the 2000 Rule, HUD developed a new methodology for estimating aggregate multifamily conventional loan originations. The method, here labeled ''HUD New'', was developed to make full use of the available data, and in particular the four sources listed above, which encompass most of the multifamily mortgage market.

The advantages of HUD New are that it provides reasonably complete coverage of the market, produces those estimates within nine months of the end of the year, generally includes only current originations and avoids double counting. The main disadvantage of HUD New is that it produces a lower bound estimate. Some loan originators are missed, including pension funds, government entities at the federal, state, and local levels, real estate investment trusts, and some mortgage bankers. Also excluded are loans made by private individuals and partnerships. In addition to these exclusions, estimates from the covered lenders require some judgmental adjustments to conform to the definitions and time intervals of HUD New.

Despite these limitations, HUD New is one sound way to estimate the size of the multifamily conventional mortgage market. The method requires unavoidable judgment calls on which analysts will differ. However, due to the reasonableness of the HUD New approach, the value of maintaining continuity in estimation methods, and the fact that no data has become available in the past few years that would argue for modifying HUD New, it is used here for the baseline estimate of the size of the conventional multifamily mortgage market in 2000, 2001 and 2002.

The estimates from HUD New are presented in Table D.2. This table is the counterpart of Table D.5 in the 2000 Rule. The historical years have two columns each, one for the estimates presented in the 2000 Rule and one for estimates independently produced as part of this research. Footnotes to the table provide more complete descriptions of the components. Additional background on the calculations is provided in the 2000 Rule (Appendix D, Section C).

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Table D.2
Estimated Multifamily Conventional Origination Volume, 1995-2002
New HUD Methodology
($ millions)

	1995	1995r	1996	1996r	1997	1997r	1998	1998r	1999 [6]	1999r	2000 [7]	2000r	2001 (New)	2002 (New) [8]
Fannie Mae [1]	$ 3,322	$ 3,327	$ 4,315	$ 4,322	$ 4,370	$ 4,378	$ 7,644	$ 7,657	$ 6,697	$ 6,708	$ 5,641	$ 6,953	$ 12,818	$ 11,129
Freddie Mac [1]	1,047	1,049	1,491	1,493	7,136	1,501	2,615	2,620	4,803	4,811	5,096	4,040	6,371	7,140
CMBS multifamily [2]	0	n/a	4,436	4,436	1,499	7,136	15,677	15,677	10,805	10,805	8,271	7,221	9,244	7,892
HMDA-portfolio [3]	15,714	15,714	17,321	17,321	18,521	18,521	22,485	22,485	19,336	23,359	19,162	21,840	27,173	35,454
Life insurance companies [4]	3,072	4,419	4,115	4,115	4,403	4,403	4,465	4,465	2,865	2,865	3,805	2,094	3,373	6,089
Private pension funds [5]	427	427	812	812	835	835								
St. & local retirement funds [5]	228	228	197	197	228	228								
Federal credit agencies [5]	627	627	404	404	408	408								
St. & local credit agencies [5]	358	358	1,394	1,394	840	840								
Total	24,795	26,149	34,484	34,493	38,240	38,250	52,886	52,904	44,505	48,547	41,976	42,148	58,979	67,704

[1] Source: OFHEO, 2002 Annual Report, Tables 1 and 11. Includes cash purchases from lenders plus lender-originated securitizations; excludes non-GSE securities and repurchased GSE securities. Figures in OFHEO tables are reduced here by 33 percent to adjust for seasoned and government-insured loans, as explained in the 2000 Rule.

[2] Commercial Mortgage Alert (CMA) database. Excludes agency, bank, thrift, insurance company, foreign, and seasoned securitizations.

[3] HMDA tabulation by HUD; includes conventional multifamily loans originated by depositories but not sold, plus conventional multifamily loans acquired by depositories but not sold, less overlap.

[4] Source: American Council of Life Insurers, Mortgage Commitments Survey; figures are loan commitments from Q4 of previous year plus commitments in first three quarters of current years (to approximate the time lag from loan commitment to origination).

[5] Source: Survey of Mortgage Lending Activity.

[6] HMDA figure projected based on 1998 HMDA in conjunction with 1998-1999 change in transactions volume for GSE and CMBS market segments.

[7] Estimate based on partial-year data.

[8] CMBS estimate based on partial-year data.

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The revisions to the historical estimates result from both revisions to some of the input data and recalculations. For the years 1995 through 1998, the revisions are small for the estimates of total originations. The only one of note is a 5 percent upward revision to the estimate for 1995, prompted by a recalculation of the entry for life insurance companies. The revision to 1999 is larger, and results mostly from the substitution of the actual HMDA results for that year for the projected value used in the 2000 Rule. Surprisingly, the revised estimate for 2000 based on complete data for that year only varies slightly from the projection made at the time of the 2000 Rule.

Most of the historical estimates produced in 2000 can be replicated or closely approximated, including those for Fannie and Freddie, CMBS, HMDA, and life insurance companies. The replicability of the CMBS figures is especially heartening, in light of all the selection criteria and hand calculations required to generate those estimates from the CMBS database. (In the 2000 Rule, the estimates for Freddie Mac and CMBS originations in 1997 appear to have been switched, and the revised estimates make this correction.)

The revised figures for 1999 and 2000 indicate that total conventional originations dropped 8 percent in 1999 from 1998's very strong level and another 13 percent in 2000. However, the HUD New estimate indicates that total conventional originations then jumped 40 percent in 2001 and further increased 15 percent in 2002. Judging from Survey of Mortgage Lending Activity estimates since 1970, the 2002 number is a new record high. For 2002, most of the increased volume is due to increases by HMDA lenders and life insurance companies.

One possible concern is that the significant increase in the HMDA number in 2002 was caused by the FFIEC relaxing its eligibility requirements between 2001 and 2002. This concern turns out to be unfounded. The FFIEC actually raised its eligibility requirements. The level of assets required by FFIEC to be reported to HMDA increased from $31 million in 2001 to $32 million in 2002. In addition, the number of HMDA reporters decreased from 7,771 in 2001 to 7,638 in 2002.

3. An Alternative Method

The HUD New method makes use of all the available sources of data on individual origination sources in attempting to estimate total conventional mortgage originations. However, as discussed in the 2000 Rule and summarized above, unavoidable gaps in coverage make the resulting HUD New figures lower-bound estimates of actual originations rather than best ''point'' estimates. In addition, even for those loans that are available, certain assumptions must be made to convert the available data into estimates corresponding to the desired definition and time periods.

An alternative to the bottom-up approach of HUD New avoids some of the data problems. The Federal Reserve's Flow of Funds accounts provide the most complete and timely set of estimates of multifamily mortgage credit. The Flow of Funds statistics refer to net changes in credit outstanding rather than gross originations. Specifically, balance sheet estimates of mortgage assets of lenders are used to produce estimated changes in holdings of mortgages over time. An alternative label for the resulting time series is ''net change in mortgage debt outstanding.''

The historical relationship between gross originations and net change can be used to estimate recent origination volume. Separate information on FHA multifamily activity can be used to convert the total originations to estimates of only conventional originations. The Flow of Funds method that is described in this section will be called ''FoF-based.''

Flow of Funds estimates of mortgage debt outstanding are based on data from sources of varying accuracy and timeliness. Bank and thrift institution holdings, taken from regulatory filings, are by all accounts highly accurate, as are those from the government sponsored agencies and direct Federal government holdings. The private MBS data and the life insurance company figures, both taken from Wall Street sources, are also thought to be reasonably accurate. Less accurate are the estimates of loans made by private individuals and certain institutions, for which comprehensive data on loans outstanding is provided only once every ten years, through the Residential Finance Survey. Fortunately, the depository institutions, GSEs, and mortgage-backed securities account for the bulk of all holdings of mortgage debt (approximately 72 percent, according to the Flow of Funds estimates for year-end 2001).

The net change in mortgage debt outstanding in any year is the lower bound on originations. This is because the net change is defined as originations less the sum of principal repayments and charge offs. Historically loan originations have exceeded the net change by a considerable margin in both the multifamily and single-family markets. There are several reasons why the relationship of originations to net change differs between the multifamily and single-family sectors, but the basic principles apply to both sectors.

Table D.3 presents the annual estimates from the Flow of Funds. Also shown are the estimates of multifamily conventional originations as published in Table D.10 from the 2000 rule, and FHA originations from HUD administrative records.

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Table D.3

Multifamily Mortgage Lending

Year	(A) Net Change in Mortgage Debt Outstanding	(B) Conventional Mortgage Originations	(C) FHA Originations	(D) Total Originations	D/A	D-A	Memo: Ten-Year Treasury Yield Annual Average (%)	Memo: Ten-Year Treasury Yield Ann. Avg. Less Avg. of Previous Five Yrs (% Points)
1990	-1.4	N/A	1	N/A	N/A	N/A	8.6	-0.3
1991	-3.9	23	1	24	-6.2	27.9	7.9	-0.5
1992	-12.3	25	2	27	-2.2	39.3	7.0	-1.4
1993	-4.4	29	3	32	-7.3	36.4	5.9	-2.3
1994	0.5	32	3	35	70.0	34.5	7.1	-0.5
1995	6.4	34	3	37	5.8	30.6	6.6	-0.7
1996	12.4	35	4	39	3.1	26.6	6.4	-0.4
1997	12.2	38	4	42	3.4	29.8	6.4	-0.2
1998	31.5	54	4	58	1.8	26	5.3	-1.2
1999	37.4	*52 (47)*	4	*56* (51)	*1.5* (1.4)	*19* (14)	5.7	-0.7
2000	37.3	*52 (43)*	4	*56* (47)	*1.5* (1.3)	*19* (10)	6.0	0.0
2001	48.3	*67*	5	*71*	*1.5*	23	5.0	-0.9
2002	44.2	*62*	4.5	*66*	*1.5*	22	4.6	-1.1

Sources and Notes:

Italics in Columns B and D indicate estimates not appearing in the 2000 Rule. Numbers in parentheses are estimates from the 2000 Rule.

Columns A through D are in billions of dollars.

Columns A is from Federal Reserve Board Flow of Funds Accounts.

Column B is mid-point of the range in Column 8 of Table D.10 in 2000 Rule Appendix D where the 1999 value is labeled preliminary and the 2000 value is labeled projected.

Column C estimates are from HUD.

Interest rates are from the Federal Reserve Board.

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The ratio of mortgage originations to net change should be positively correlated with the proportion of total originations that are refinancings, for which the net change in mortgage debt would be expected to be low relative to that on loans taken out in connection with a property acquisition. (This is the pattern observed in the single-family mortgage market.) Refinancings, in turn, would be expected to be prevalent relative to purchase loans at times when interest rates are low relative to their recent past.

The historical evidence generally supports this expectation regarding the relationship of originations to net lending. As shown in Table D.3, total originations have been highest relative to net change when interest rates have been low relative to their recent past. The ten-year Treasury yield, a common benchmark for pricing multifamily mortgages, has generally trended down since 1990. The early 1990s were all marked by high originations relative to net change, and these were also years in which interest rates were particularly low relative to their trailing five-year averages. In 1996 and 1997, by contrast, originations were less high relative to net change, and these were years in which interest rates were only slightly lower than their five-year trailing averages.

In estimating conventional originations for 1999–2002, the 1998 experience is a useful benchmark. That year, total originations exceeded the net change by about 80 percent, as shown in Table D.3. There was also a big drop in interest rates in 1998 relative to the recent past, providing an incentive for refinancings. As shown in the table, interest rates rose slightly in 1999 and again in 2000, presumably diminishing the incentive to refinance. Nonetheless, the net change in mortgage debt was higher in 1999 and 2000 than it had been in 1998.

Putting all this together, it seems that the appropriate ratio of total originations to net change to apply to 1999 and 2000 would be below that of 1998 and of most other years of the 1990s. Applying a ratio of 1.5 to the net change estimates in 1999 and 2000 results in a total originations estimate of approximately $56 billion. Subtracting the $4 billion in FHA originations results in estimates of $52 billion for conventional originations in each year. A subjective confidence band around this point estimate is at least +/−$2 billion.

Turning to the estimate for 2001, the first thing to note is that net change in mortgage debt jumped to $48 billion from $37 billion of the previous two years. The second thing to note is that interest rates fell by nearly a percentage point in 2001 relative to their past average. For both of these reasons, total originations in 2001 would be expected to have been higher than in 1999 or 2000. How much higher is a subjective judgment, but 1.5 would seem an appropriate multiple to apply to the net change number in 2001. This is the same multiple as in 1999 and 2000, despite the added refinancing incentive in 2001. By the beginning of 2001, there were relatively few properties ‘‘at risk’’ of refinancing. Many presumably had refinanced in one of the preceding years, and lock-out provisions, yield maintenance agreements, and other loan conditions may have kept these properties from coming in for refinancings. Also, there may have been some short-run capacity problems in the multifamily loan origination industry in 2001 that further curtailed volume.

Applying the 1.5 multiple to 2001's net change of $48 billion yields a total originations estimate of $72 billion. Subtracting the $5 billion of FHA business results in a conventional originations estimate of $67 billion, to which a subjective confidence band of at least +/-$2 billion appears warranted.

As seen in Table D.3, the Flow of Funds methodology indicates that total conventional originations decreased 7.5% between 2001 and 2002. In 2002, the net change in mortgage debt decreased slightly to $44 billion. Using the 1.5 multiple for 2002's net change of $44.2 billion yields a total originations estimate of $66 billion. Subtracting $4.5 billion of FHA business results in a conventional originations estimate of $62 billion.

This Flow of Funds estimate is over $5 billion less than the estimate from HUD New. This is surprising given that the HUD New method is supposed to serve as a lower boundary on the size of the multifamily market, while the Flow of Funds method is designed to produce a higher ‘‘point’’ estimate of the actual size of the market.

4. Most Likely Range

In the 2000 Rule, estimates of conventional multifamily loan originations from various sources and methods were evaluated in determining the most likely range of annual originations. Those estimates were summarized in Table D.10 in the 2000 Rule. Some of the estimates from that table are reproduced below, in Table D.4, along with updates and estimates from the Flow of Funds method.

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Table D.4

Estimates of Conventional Multifamily Mortgage Market ($ billions)

	(1) SMLA	(2) SMLA Adjusted	(3) New	(4) New Revised & Adjusted	(5) ACLI+ 1.25*HMDA	(6) Urban Institute	(7) Fannie Mae	(8) Freddie Mac	(9) FoF Based	(10) Misc	(11) Likely Range in 2000	(11) Likely Range now	(12) Multifamily Mix (Pct) Min	(12) Multifamily Mix (Pct) Max
1990	$30.6	$25.9			$51.4					$37.4 (RFS)				
1991	$24.6	$22.7			$11.8						$22-24		16%	17%
1992	$25.2	$23.5			$14.0	$28.7					$24-26		11%	12%
1993	$30.0	$28.9			$17.9	$30.2					$28-30		13%	14%
1994	$31.7	$31.7			$21.4	$33.8	$32.2				$31-33		20%	21%
1995	$37.9	$32.4	$ 24.8	$26.1	$20.4	$38.5	$33.7	$21-27		$36.7 (POMS)	$33-35		20%	21%
1996	$43.7	$33.3	$ 34.5	$34.5	$23.8	$40.6		$24-29			$33-37		17%	19%
1997	$44.6	$35.5	$ 38.2	$38.3	$28.8	$43.9	$35-40	$28-30			$36-40		16%	18%
1998			$ 52.9	$52.9	$38.3	$40.6	$40-45	$40-50			$52-55		13%	14%
1999			$ 44.5	$48.6	$42.2	$48.3	$37-41		$52		$45-48	$50-54	15%	16%
2000			$ 42.0	$42.1	$34.8	$50.6			$52		$42-44	$48-52	16%	17%
2001				$59.0	$48.4				$67			$65-69	13%	14%
2002				$67.7	$61.3				$62			$60-64 and $67.7	9.8% and 10.9%	10.4%

Sources and Notes:

The following entries are from Table D.10 of the 2000 Rule: Columns 1-3,5 (through 1998), 6-8, 10, and "Likely Range in 2000". All of these entries are described and interpreted in the 2000 Rule.

Columns 4,9, and "Likely Range Now" are derived and explained in the text of this Appendix.

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Both HUD New (column #4 in Table D.4) and FoF-based (column #9) indicate a surge in lending activity in 2001. Some corroboration of this jump is provided by other indicators, flawed though they may be. HMDA has well-documented coverage problems with multifamily loans, but it is noteworthy that HMDA-estimated conventional originations stayed in the same general range ($26 to $31 billion) in 1998–2000 before jumping to $36 billion in 2001. The composite of 1.25 times HMDA originations plus life insurance commitments, described in the 2000 Rule and updated here in column #5, also follows this basic path. Similarly, aggregate GSE multifamily purchases and securitizations stayed in the same general level in 1998–2000, before jumping in 2001, although this trend reflects changes in both market size and GSE market share. FHA originations (not shown) also rose substantially in 2001, but this too may indicate more than just market size trends.

Column #11 of Table D.4 gives the likely ranges of originations for each of the years. These are based on the estimates from all sources and interpretations of their strengths and weaknesses. In 1999, the $4 billion upward revision to the HUD New estimate from the preliminary figure reported in the 2000 Rule, together with the higher estimate produced by the FoF-based method, justify an upward revision to the $45–$48 range estimated in the 2000 Rule. The revised range is set at $50–54 billion. In 2000, HUD New (revised and extended version) suggests that originations were somewhat lower than in 1999, but FoF-based has originations holding at $52 billion. Balancing these conflicting indicators, a range of $48–$52 billion is selected for 2000. Finally, all indicators point to a substantial pickup in 2001, and the range that seems to fit best with those indicators is $65–$69 billion.

In 2002, the various methods of estimation give a mixed picture. HUD New indicates a surge in lending activity in 2002, while the flow of funds method shows a decrease in lending activity. Other methods also show divergent trends. The composite of 1.25 times HMDA originations plus life insurance commitments also shows a significant increase between 2001 and 2002. On the other hand, aggregate GSE multifamily purchases and securitizations showed a slight decrease between 2001 and 2002. FHA originations (not shown) also decreased slightly in 2002.

While this is a subjective judgment, 1.5 may not be the appropriate multiple to apply to net mortgage debt outstanding in the flow of funds model in 2002. The difference between the flow of funds estimate and the HUD estimate cannot be reconciled without adjusting the FOF multiple. Given the low interest rates in 2002, and a refinancing boom in the single-family mortgage market, it could be that the multifamily market also had a significant amount of refinancing activity. In such a case, there could be an increase in the size of the multifamily market without a corresponding increase in net mortgage debt outstanding. A higher multiple would need to be applied to the Flow of Funds model to compensate for the increase in multifamily refinancings.

Due to data limitations, the above remains a speculation. The largest increase in multifamily volume came from HMDA reporting lenders. The HMDA data do not allow for the separation of multifamily purchase originations from refinancings. Other data sources need to be explored to determine if an adjustment to the FoF-based model is appropriate.

5. Loan Amount per Unit

In determining the size of the conventional multifamily mortgage market for purposes of the GSE rules, the measure of market size is the annual number of conventionally financed multifamily rental housing units. The number of units is derived by dividing the aggregate annual originations by an estimate of the average loan amount per housing unit financed. For this reason, accuracy in the estimate of loan amount per unit is as important as accuracy in the dollar estimate of aggregate conventional originations. A 10 percent error in either will result in a 10 percent error in the estimate of market size.

The 2000 Rule used estimates of loan amount per unit drawn from various sources. As summarized in Table D.9 of the 2000 Rule and the accompanying text, the estimates for 1993–1998 were taken from the GSEs and for 1999 from CMBS data. ‘‘Unpaid Principal Balance’’ or UPB—a balance sheet measure which for current year loan originations will differ little from the initial loan amount—is used to calculate aggregate originations of loans bought or securitized by the GSEs or pooled into non-GSE mortgage-backed securities. The figures from Table D.9 of the 2000 Rule are reproduced below in Table D.5, along with updated estimates from all three sources for 2000, 2001 and 2002. The estimates that are new since the 2000 Rule appear in italics.

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Table D.5

Multifamily Loan Amount per Unit, 1990-2002

	UPB per unit ($)*	Fannie Mae UPB ($ millions)	Fannie Mae units	Fannie Mae UPB/unit ($)	Freddie Mac UPB ($ millions)	Freddie Mac units	Freddie Mac UPB/unit ($)	CMBS UPB ($ millions)	CMBS units	CMBS UPB/unit ($)	Rent Adjusted UPB/unit ($)
1990	$ 23,847										
1991	$ 24,951										
1992	$ 25,888										
1993	$ 24,300	$ 4,602	186,471	$ 24,682	$ 191	10,794	$ 17,710				
1994	$ 21,156	$ 4,735	221,420	$ 21,383	$ 913	45,538	$ 20,052				
1995	$ 24,825	$ 5,958	235,358	$ 25,316	$ 1,582	68,381	$ 23,138				
1996	$ 25,268	$ 7,037	272,931	$ 25,782	$ 2,350	98,574	$ 23,843				
1997	$ 27,266	$ 6,896	253,065	$ 27,251	$ 2,716	99,469	$ 27,304				
1998	$ 31,041	$ 12,503	393,397	$ 31,782	$ 6,578	221,319	$ 29,723	$ 12,465	406,006	$ 30,702	
1999	$ 30,719	$ 9,393	294,091	$ 31,938	$ 7,621	191,492	$ 39,798	$ 9,238	300,724	$ 30,719	
2000	*$ 32,500*	*$ 10,078*	*289,509*	*$ 34,811*	*$ 6,781*	*163,580*	*$ 41,454*	*$ 6,223*	*184,397*	*$ 33,748*	
2001	*$ 34,000*	*$ 18,688*	*503,909*	*$ 37,086*	*$ 11,837*	*315,370*	*$ 37,534*	*$ 7,647*	*234,948*	*$ 32,548*	*$ 34,000*
2002	$ 37,040	*$ 18,278*	*461,397*	*$ 39,614*	*$ 13,330*	*333,038*	*$ 40,025*	*$ 5,662* **	*152,863* **	*$ 37,040*	*$ 35,000*

Figures in italics for 2000, 2001 and 2002 are new; all other figures are from Table D.9 of the 2000 Rule.

* 1990-1992: Average single-family conventional conforming loan amount/3.57. See 2000 Rule for details.

1993-1998: Weighted average of Fannie Mae and Freddie Mac.

1999: CMBS data.

2000-2001: See text.

** Data for CMBS only covers the first 10 months of 2002.

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Several options are available for developing estimates for 2000, 2001 and 2002. The first is to use the UPB (unpaid principal balance) per unit estimates from the GSEs. These estimates, taken from the Fannie Mae and Freddie Mac annual activity reports to HUD, are as follows, computed as in the 2000 Rule as a unit-weighted average of the unpaid principal balance (UPB) per multifamily unit in Fannie Mae's and Freddie Mac's portfolios:

1997	$27,266
1998	31,041
1999	35,038
2000	37,208
2001	37,258
2002	39,787

The figure for 2002 is approximately 46 percent higher than in 1997. Both Fannie Mae and Freddie Mac's portfolios generate estimates of between $39,000 and $40,000 for 2002.

Several alternative approaches to estimating loan amount per unit are available. The first is to base the estimate on CMBS data, as was done for 1999 in the 2000 Rulemaking. As shown in the last column of Table D.5, the estimates of UPB/unit from this source are somewhat below those of the GSEs and indicate less increase since the late1990s.

In the first 10 months of 2002, CMBS properties showed a UPB/unit of $37,038, a nearly 14 percent jump over the previous year. Although slightly below the UPB/unit for the GSEs, the CMBS numbers are closer to the GSE calculations than in previous years.

Another approach is to move the 1999 estimate of UPB/unit forward by some justifiable index. The 2001 estimates use the change in average rent on multifamily rental units from the American Housing Survey. Because AHS data are not available for 2002, the 2002 estimate uses the consumer price index for rent of primary residence. Both AHS and CPI rent estimates are listed below:

Year	Median	Mean	CPI
1999	$550	$592	177.5
2001	590	647	192.1
2002	N/A	N/A	199.7

There is some variation between the two measures. In the AHS, median rent rose 7.3 percent over this two-year period, and mean rent increased 9.3 percent. Meanwhile, the CPI showed an increase of 8.2 percent. In 2001, using the AHS produces an estimate of $34,000. The CPI yields a smaller estimate for 2001; applying the 8.2 percent increase from the CPI results in a 2001 estimate of $33,200. Since the AHS data are unavailable in 2002, the CPI provides a 2002 estimate of approximately $35,000.

In 2001, the rent-adjusted 1999 estimate was in between the estimates from the CMBS and GSE data, and was a fair estimate of the actual size of the market. In 2002, however, the rent-adjusted number is below both the CMBS and GSE calculations. The rent-adjusted number could be underestimating the 2002 UPB/unit. Either the CMBS or GSE calculations, or an average of the various methods could be used. Section F will report the results of several sensitivity analyses showing the effects of the different multifamily mortgage estimates (HUD New versus Flow-of-Funds) and different per unit amounts ($35,000 or $37,275 which is an average of the various estimates) on the goals-qualifying shares for the year 2002. Under the various estimates, the multifamily mix (defined below) for 2002 ends up around 11 percent.

6. Multifamily Mix During the 1990s

The section uses the information on dollar volume of multifamily originations (Table D.4) and average loan amounts (Table D.5) to estimate the number of multifamily units financed each year as a *percentage share* of the total (both single-family and multifamily) number of dwelling units financed each year; the years covered include 1991 to 2001. This percentage share, called the ''multifamily mix'', is reported in the last two columns of Table D.4.[13] The ''minimum'' (''maximum'') multifamily mix figure reflects the low (upper) end of the ''likely range'' of multifamily dollar originations, also reported in Table D.4. Because of the high goals-qualifying shares of multifamily housing, the multifamily mix is an important parameter in HUD's projection model for the overall market; other things equal, a higher multifamily mix (or conversely, a lower share of single-family loans) leads to a higher estimate of goals-qualifying loans in the overall mortgage market.

Based on the ''likely range'' of annual conventional multifamily origination volume, multifamily units have represented 15.1 percent (the average of the ''minimum'' figures) to 16.3 percent (the average of the ''maximum'' figures) of units financed each year between 1991 and 2002. Considering the mid-points of the ''likely range'', the multifamily mix averaged 15.7 percent during this period. Notice that multifamily mix is lower during years of heavy refinancing when single-family originations dominate the mortgage market; the multifamily mix was only 13–14 percent during 1993, 1998, and 2001, and approximately 11 percent during 2002.[14] As discussed in Sections F–H, the record single-family originations ($3.3 trillion) during 2003 likely resulted in a lower multifamily mix than any of the years between 1991 and 2002. Sensitivity analyses are conducted to show the effects of multifamily mixes less than the previous lows of 11 percent in 1992 and 2002.

The multifamily share of the conforming conventional market (or ''multifamily mix'') is utilized below as part of HUD's analysis of the share of units financed each year meeting each of the housing goals. Following the 2000 Rule, the analysis will focus on multifamily mixes of 15 percent and 16.5 percent, which seems reasonable given the 1991–2002 estimates reported in Table D.4. While at the low end of the 1992–2002 averages for the ''likely range'', a 15 percent mix more readily accommodates any uncertainty about the data and the estimation process. An alternative multifamily mix assumption of 13.5 percent is also considered, as well as even lower ones in order to fully consider the effects of heavy refinancing environments such as 2001–03.

D. Single-Family Owner and Rental Mortgage Market Shares

1. Available Data

As explained later, HUD's market model will also use projections of mortgage originations on single-family (1–4 unit) properties. Current mortgage origination data combine mortgage originations for the three different types of single-family properties: owner-occupied, one-unit properties (SF–O); 2–4 unit rental properties (SF 2–4); and 1–4 unit rental properties owned by investors (SF–Investor). The fact that the goal percentages are much higher for the two rental categories argues strongly for disaggregating single-family mortgage originations by property type. This section discusses available data for estimating the relative size of the single-family rental mortgage market.

The Residential Finance Survey (RFS) and HMDA are the data sources for estimating the relative size of the single-family rental market. The RFS, provides mortgage origination estimates for each of the three single-family property types but it is quite dated, as it includes mortgages originated between 1987 and 1991. (An updated version of the RFS based on the 2000 Census will not be available until the spring of 2004). HMDA divides newly-originated single-family mortgages into two property types: [15]

(1) Owner-occupied originations, which include both SF–O and SF 2–4.

(2) Non-owner-occupied mortgage originations, which include SF Investor.

The percentage distributions of mortgages from these data sources are provided in Table D.6a. (Table D.6b will be discussed below.) Because HMDA combines the first two categories (SF–O and SF 2–4), the comparisons between the data bases must necessarily focus on the SF investor category. According to 2000 (2001) HMDA data, investors account for 9.4 (9.9 percent) percent of home purchase loans and 7.6 percent (5.9 percent) of refinance loans.[16]

[13] 1990 is excluded from this calculation because of the unusually high multifamily mix that year. Also, the estimated multifamily mix from the HUD New Method is also provided for 2002 since it was greater than the estimate from the Flow of Funds method.

[14] The projection model for 2002 showed the following multifamily mixes for 2002: 11.5 percent for the HUD New multifamily estimate ($67.7 billion) if the average loan amount is $35,000 and 10.9 percent if the average loan amount is $37,275; 11.0 percent for the top end ($64 billion) of the Flow of Funds multifamily range ($60–64 billion) if the average loan amount is $35,000 and 10.4 percent if the average loan amount is $37,275; 10.7 percent for the mid-point ($62 billion) of the Flow of Funds multifamily range if the average loan amount is $35,000 and 10.1 percent if the average loan amount is $37,275; and 10.4 percent for the low end ($60 billion) of the Flow of Funds multifamily range if the average loan amount is $35,000 and 9.8 percent if the average loan amount is $37,275.

[15] The data in Table D.6a ignore HMDA loans with ''non-applicable'' for owner type.

[16] Due to the higher share of refinance mortgages during 2001, the overall single-family-owner

Assuming a 35 percent refinance rate per HUD's projection model, the 2000 (2001) HMDA data are consistent with an investor share of 8.8 (8.5) percent.[17] The RFS estimate of 17.3 percent is approximately twice the HMDA estimates. In their past comments, the GSEs have argued that the HMDA-reported SF investor share should be used by HUD. In its 1995 and 2000 rules, HUD's baseline model assumed a 10 percent share for the SF investor group—only slightly higher than the HMDA-based estimates; alternative models assuming 8 percent and 12 percent were also considered. As discussed below, HUD's baseline projection of 10 percent is probably quite conservative; however, given the uncertainty around the data, it is difficult to draw firm conclusions about the size of the single-family investor market, which necessitates the sensitivity analysis that HUD conducts. The release this spring of the updated RFS should clarify this issue.

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percentage reported by HMDA for 2001 (92.7 percent) is larger than that reported for 2000 (91.3 percent).

[17] HMDA data for 2002 would yield a slightly higher investor share; the derived investor share assuming a 35 percent refinance rate would be 9.6 percent if 2002 HMDA data were used.

Table D.6a

Percentage Distribution of Single-Family-Owner and Rental Mortgages

	2000 (2001) HMDA (Percent)				Projected (Assume 35% Refinance Rate)		1987-91[1] RFS	HUD's 1995 and 2000 Rules
	Purchase		Refinance					
SF-O	90.6	(90.1)	92.4	(94.1)	91.2	(91.5)	80.4	88.0
SF 2-4	(Included above)						2.3	2.0
SF Investor	9.4	(9.9)	7.6	(5.9)	8.8	(8.5)	17.3	10.0
Total	100.0	(100.0)	100.0	(100.0)	100.0	(100.0)	100.0	100.0

Note: All data are for metropolitan areas. The refinance rate of 35 percent is assumed in HUD's baseline model described in Section E.

Table D.6b

Percentage Distribution of Newly-Mortgaged Single-Family-Owner and Rental Units

	2000 (2001) HMDA With 35% Refinance Assumption		1997-91 RFS	HUD's 1995 and 2000 Rules	Blackley/Follain Alternative
SF-O	84.5	(84.8)	73.8	83.0	80.6
SF-2-4 Owner[1]	1.9	(1.9)	2.1	1.9	1.9
SF-2-4 Renter	2.4	(2.4)	2.7	2.4	2.3
SF Investor	11.2	(10.9)	21.4	12.7	15.2
Total	100.0	(100.0)	100.0	100.0	100.0
SF-Rental	13.6	(13.3)	24.1	15.1	17.5

[1] All data are for metropolitan areas. Notice that the SF 2-4 category has been divided into its owner and renter subcomponents. This is easily done based on the assumption of 2.25 units per SF 2-4 mortgage For each mortgage, one unit represents the owner occupant and 1.25 additional units represent renter occupants. The owner-occupant of the 2-4 property is included in the SF-O category in this appendix. This is necessary because different data sources are used to estimate the owner's income and the affordability of the rental units. The income of owners of 2-4 properties are included in the borrower income data reported by HMDA. The AHS and POMS will be used to estimate the affordability of the rental units.

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2. Analysis of Investor Market Share

Blackley and Follain. During the 1995 rule-making, HUD asked the Urban Institute to analyze the differences between the RFS and HMDA investor shares and determine which was the more reasonable. The Urban Institute's analysis of this issue is contained in reports by Dixie Blackley and James Follain.[18] Blackley and Follain provide reasons why HMDA should be adjusted upward as well as reasons why the RFS should be adjusted downward. They find that HMDA may understate the investor share of single-family mortgages because of ''hidden investors'' who falsely claim that a property is owner-occupied in order to more easily obtain mortgage financing. RFS may overstate the investor share of the market because units that are temporarily rented while the owner seeks another buyer may be counted as rental units in the RFS, even though rental status of such units may only be temporary. The RFS's investor share should be adjusted downward in part because the RFS assigns all vacant properties to the rental group, but some of these are likely intended for the owner market, especially among one-unit properties. Blackley and Follain's analysis of this issue suggests lowering the investor share from 17.3 percent to about 14–15 percent.

Finally, Blackley and Follain note that a conservative estimate of the SF investor share is advisable because of the difficulty of measuring the magnitudes of the various effects that they analyzed. In their 1996 paper, they conclude that 12 percent is a reasonable estimate of the investor share of single-family mortgage originations.[19] Blackley and Follain caution that uncertainty exists around this estimate because of inadequate data.

3. Single-Family Market in Terms of Unit Shares

The market share estimates for the housing goals need to be expressed as percentages of *units* rather than as percentages of mortgages. Thus, it is necessary to compare unit-based distributions of the single-family mortgage market under the alternative estimates discussed so far. The mortgage-based distributions given in Table D.6a were adjusted in two ways. First, the owner-occupied HMDA data were disaggregated between SF–O and SF 2–4 mortgages by assuming that SF 2–4 mortgages account for 2.0 percent of all single-family mortgages; according to RFS data, SF 2–4 mortgages represent 2.3 percent of all single-family mortgages so the 2.0 percent assumption may be slightly conservative. Second, the resulting mortgage-based distributions were shifted to unit-based distributions by applying the following unit-per-mortgage assumptions: 2.25 units per SF 2–4 property and 1.35 units per SF investor property. Both figures were derived from the 1991 RFS.[20]

Based on these calculations, the percentage distribution of newly-mortgaged single-family dwelling *units* was derived for each of the various estimates of the investor share of single-family mortgages (discussed earlier and reported in Table D.6a). The results are presented in Table D.6b. Three points should be made about these data. *First,* notice that the ''SF–Rental'' row highlights the share of the single-family mortgage market accounted for by all rental units.

Second, notice that the rental categories represent a larger share of the unit-based market than they did of the mortgage-based market reported earlier. This, of course, follows directly from applying the loan-per-unit expansion factors.

Third, notice that the rental share under HMDA's unit-based distribution is again about one-half of the rental share under the RFS's distribution. The rental share in HUD's 1995 and 2000 Rules and this year's proposed rule is slightly larger than that reported by HMDA. The rental share in the ''Blackley-Follain'' alternative is slightly above HUD's estimate. Rental units account for 15.1 percent of all newly financed single-family units under HUD's baseline model, compared with 13.7 (13.1) percent under a model based on 2000 (2001) HMDA data.

4. Conclusions

This section has reviewed data and analyses related to determining the rental share of the single-family mortgage market. There are two main conclusions:

- While there is uncertainty concerning the relative size of this market, the projections made by HUD in 1995 and 2000 appear reasonable and, therefore, will serve as the baseline assumption in the HUD's market share model for this year's Proposed Rule.
- HMDA likely underestimates the single-family rental mortgage market. Thus, this part of the HMDA data are not considered reliable enough to use in computing the market shares for the housing goals. Various sensitivity analyses of the market shares for single-family rental properties are conducted in Sections F, G, and H. These sensitivity analyses will include the GSEs' recommended model that assumes investors account for 8 percent of all single-family mortgages. These sensitivity analyses will show the effects on the overall market estimates of the different projections about the size of the single-family rental market.

The upcoming RFS based on the year 2000 Census will help clarify issues related to the investor share of the single-family mortgage market. At that time, HUD will reconsider its estimates of the investor share of the mortgage market.

E. HUD's Market Share Model

This section integrates findings from the previous two sections about the size of the multifamily mortgage market and the relative distribution of single-family owner and rental mortgages into a single model of the mortgage market. The section provides the basic equations for HUD's market share model and identifies the remaining parameters that must be estimated.

The output of this section is a unit-based distribution for the four property types discussed in Section B.[21] Sections F–H will apply goal percentages to this property distribution in order to determine the size of the mortgage market for each of the three housing goals.

1. Basic Equations for Determining Units Financed in the Mortgage Market

The model first estimates the number of dwelling units financed by conventional conforming mortgage originations for each of the four property types. It then determines each property type's share of the total number of dwelling units financed.

a. Single-Family Units

This section estimates the number of single-family units that will be financed in the conventional conforming market, where single-family units (SF–UNITS) are defined as:

SF–UNITS = SF–O + SF 2–4 + SF–INVESTOR

First, the dollar volume of conventional conforming single-family mortgages (CCSFM$) is derived as follows:

(1) CCSFM$ = CONV% * CONF% * SFORIG$

Where:

CONV% = conventional mortgage originations as a percent of total mortgage originations; estimated to be 88%.[22]

CONF% = conforming mortgage originations (measured in dollars) as a percent of conventional single-family originations; forecasted to be 80% by industry.

SFORIG$ = dollar volume of single-family one-to-four unit mortgages; $1,700 billion is used here as a starting assumption to reflect market conditions during the years 2005–2008.[23] While

[18] Dixie M. Blackley and James R. Follain, ''A Critique of the Methodology Used to Determine Affordable Housing Goals for the Government Sponsored Housing Enterprises,'' report prepared for Office of Policy Development and Research, Department of Housing and Urban Development, October 1995; and ''HUD's Market Share Methodology and its Housing Goals for the Government Sponsored Enterprises,'' unpublished paper, March 1996.

[19] Blackley and Follain (1996), p. 20.

[20] The unit-per-mortgage data from the 1991 RFS match closely the GSE purchase data for 2001. Blackley and Follain show that an adjustment for vacant investor properties would raise the average units per mortgage to 1.4; however, this increase is so small that it has little effect on the overall market estimates.

[21] The property distribution reported in Table D.1 is an example of the output of the market share model. Thus, this section completes Step 1 of the three-step procedure outlined above in Section B.

[22] According to estimates by the Mortgage Bankers Association of America (MBAA), the conventional share of the 1–4 family market was between 86 and 88 percent of the market from 1993 to 1999, with a one-time low of 81 percent in 1994. Calculated from ''1–4 Family Mortgage Originations'' tables (Table 1—Industry and Table 2—Conventional Loans) from ''MBAA Mortgage and Market Data,'' at *www.MBAAa.org/marketkdata/* as of July 13, 2000. More recent unpublished estimates by MBAA are slightly higher.

[23] Single-family mortgage originations of $1,700 billion are similar to Freddie Mac's projection of $1,748 billion for 2005 and Fannie Mae's projection of $1,675 billion for 2005. As discussed later, single-family originations could differ from $1,700 billion during the 2005–2008 period that the goals will be in effect. As recent experience shows,

Continued

alternative assumptions will be examined, it must be emphasized that the important concept for deriving the goal-qualifying market shares is the relative importance of single-family versus multifamily mortgage originations (the ''multifamily mix'' discussed in Section C) rather than the total dollar volume of single-family originations considered in isolation.

Substituting these values into (1) yields an estimate for the conventional conforming market (CCSFM$) of $1,197 billion.

Second, the number of conventional conforming single-family mortgages (CCSFM#) is derived as follows:

(2) CCSFM# = (CCSFM$ * (1–REFI)/ PSFLOAN$) + (CCSFM$ * REFI)/ RSFLOAN$)

Where:

REFI = the refinance rate, assumed to be 35 percent for the baseline.[24]

PSFLOAN$ = the average conventional conforming purchase mortgage amount for single-family properties; estimated to be $146,000.[25]

RSFLOAN$ = the average conventional conforming refinance mortgage amount for single-family properties; estimated to be $131,000.[26]

Substituting these values into (2) yields an estimate of 8.5 million mortgages.

Third, the total number of single-family mortgages is divided among the three single-family property types. Using the 88/2/10 percentage distribution for single-family mortgages (see Section D), the following results are obtained:

(3a) SF–OM# = 0.88 * CCSFM# = number of owner-occupied, one-unit mortgages = 7.5 million.

(3b) SF–2–4M# = 0.02 * CCSFM# = number of owner-occupied, two-to-four unit mortgages = 0.17 million.

(3c) SF–INVM# = 0.10 * CCSFM# = number of one-to-four unit investor mortgages = 0.85 million.

Fourth, the number of dwelling units financed for the three single-family property types is derived as follows:

(4a) SF–O = SF–OM# + SF–2–4M# = number of owner-occupied dwelling units financed = 7.7 million.

(4b) SF 2–4 = 1.25 * SF–2–4M# = number of rental units in 2–4 properties where a owner occupies one of the units = 0.2 million.[27]

(4c) SF–INVESTOR = 1.35 * SF–INVM# = number of single-family investor dwelling units financed = 1.1 million.

Fifth, summing equations 4a–4c gives the projected number of newly-mortgaged single-family units (SF–UNITS):

(5) SF–UNITS = SF–O + SF 2–4 + SF–INVESTOR = 9.0 million

b. Multifamily Units

The number of multifamily dwelling units (MF–UNITS) financed by conventional conforming multifamily originations is calculated by the following series of equations:

(5a) TOTAL = SF–UNITS + MF–UNITS

(5b) MF–UNITS = MF–MIX * TOTAL = MF–MIX * (SF–UNITS + MF–UNITS) = [MF–MIX/(1—MF–MIX)] * SF–UNITS

Where:

MF–MIX = the ''multifamily mix'', or the percentage of all newly-mortgaged dwelling units that are multifamily; as discussed in Section C, alternative estimates of the multifamily market will be included in the analysis. As explained in Section C above, the baseline model assumes a multifamily mix of 15 percent; results are also presented in the basic market tables of Sections F–H for a higher (16.5 percent) and a lower (13.5 percent) multifamily mix. In addition, further sensitivity analyses are reported in those sections for even lower multifamily mixes that could occur during periods of heavy single-family refinancing activity.

Assuming a multifamily mix of 15 percent and solving (5b) yields the following:

(5c) MF–UNITS = [0.15/0.85] * SF–UNITS = 0.176 * SF–UNITS = 1.6 million.

c. Total Units Financed

The total number of dwelling units financed by the conventional conforming mortgage market (TOTAL) can be expressed in three useful ways:

(6a) TOTAL = SF–UNITS + MF–UNITS = 10.6 million (or more precisely, 10,632,145 units)

(6b) TOTAL = SF–O + SF 2–4 + SF–INVESTOR + MF–UNITS

(6c) TOTAL = SF–O + SF–RENTAL + MF–UNITS

Where:

SF–RENTAL equals SF–2–4 plus SF–INVESTOR

2. Dwelling Unit Distributions by Property Type

The next step is to express the number of dwelling units financed for each property type as a percentage of the total number of units financed by conventional conforming mortgage originations.[28]

The projections used above in equations (1)–(6) produce the following distributions of financed units by property type:

	% Share
SF–O	72.2
SF 2–4	2.0
SF INVESTOR	10.8
MF–UNITS	15.0
Total	100.0
or	
SF–O	72.2
SF–RENTER	12.8
MF–UNITS	15.0
Total	100.0

Sections C and D discussed alternative projections for the mix of multifamily originations and the investor share of single-family mortgages. Following the 2000 Rule, this appendix will focus on three multifamily mixes (13.5 percent, 15.0 percent, and 16.5 percent) but there will also be sensitivity analysis of other multifamily mix assumptions. Under a 16.5 percent multifamily mix, the newly-mortgaged unit distribution would be 70.9 percent for Single-Family Owner, 12.6 percent for Single-Family Renter, and 16.5 percent for Multifamily-Units. The analysis in sections F-H will focus on goals-qualifying market shares for this property distribution as well as the one presented above for the more conservative multifamily mix of 15 percent.

The appendix will assume the following for the investor share of single-family mortgages—8 percent, 10 percent, and 12 percent. The middle value (10 percent investor share) is used in the above calculations and will be considered the

market projections often change. For example, the MBAA projected $1,246 billion for 2003, while their projection for 2003 rose to $1,774 billion in January 2003; of course, actual 2003 mortgage originations were almost double the latter amount. (See *http://www.MBAAa.org/marketdata/forecasts* for January 2003 Mortgage Finance Forecasts.) In its January 22, 2004 forecast, the MBAA projected mortgage originations of $1.9 trillion in 2004 and approximately $1.7 trillion in 2005 and 2006. Section F will report the effects on the market estimates of alternative estimates of single-family mortgage originations.

[24] The model requires an estimated refinance rate because purchase and refinance loans can have different shares of goals-qualifying units. In 2003, the refinance rate was over 60 percent. In its January 22, 2004 forecast, the MBAA projects 34 percent for 2004 and 22 percent for 2005. Freddie Mac projects a 36 percent refinance rate for 2004 and a 29 percent rate for 2005, and Fannie Mae projects a 48 percent refinance rate for 2004 and 24 percent for 2005. The baseline model uses a higher refinance rate of 35 percent because conforming conventional loans tend to refinance at a higher rate than the overall market. Sensitivity analyses for alternative refinance rates are presented in Sections F–H.

[25] The average 2002 purchase loan amount is estimated at $135,060 for owner occupied units using 2002 HMDA average loan amounts for single-family home purchase loans in metropolitan areas. A small adjustment is made to this figure to account for a small number of two-to-four and investor properties (see Section D above). This produces an average purchase loan size of $133,458 for 2002 which is then inflated 3 percent a year for three years and then rounded to arrive at an estimated $146,000 average loan size for home purchase loans in 2005.

[26] The average refinance loan amount is estimated by averaging the relationship between HMDA average purchase and refinance loan amounts for 1999 and 2000, which were non-refinance environments. Applying this average of 90 percent (refinance loan amount/purchase loan amount) to the $146,000 average loan amount for purchase loans gives a rounded estimate of $131,000 for average refinance loan amounts. When refinance environments are used, $146,000 average loan amounts are used for both purchase and refinance loans. This relationship is consistent with the observed relationship in past refinance years such as 1998, 2001, and 2002.

[27] Based on the RFS, there is an average of 2.25 housing units per mortgage for 2–4 properties. 1.25 is used here because one (*i.e.,* the owner occupant) of the 2.25 units is allocated to the SF–O category. The RFS is also the source of the 1.35 used in (4c).

[28] The share of the mortgage market accounted for by owner occupants is (SF–O)/TOTAL; the share of the market accounted for by all single-family rental units is SF–RENTAL/TOTAL; and so on.

''baseline'' projection throughout the appendix. However, HUD recognizes the uncertainty of projecting origination volume in markets such as single-family investor properties; therefore, the analysis in Sections F–H will also consider market assumptions other than the baseline assumptions.

Table D.7 reports the unit-based distributions produced by HUD's market share model for different combinations of these projections. The effects of the different projections can best be seen by examining the owner category which varies by 6.6 percentage points, from a low of 68.9 percent (multifamily mix of 16.5 percent coupled with an investor mortgage share of 12 percent) to a high of 75.5 percent (multifamily mix of 13.5 percent coupled with an investor mortgage share of 8 percent). The owner share under the baseline projection (15 percent mix and 10 percent investor) is 72.2 percent.

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Table D.7

Distribution of Financed Dwelling Units by Property Type for Different Projections of Multifamily and Single-Family Investor Originations

Investor Share Percentage of Single-Family Mortgage Market	Mulitfamily Mix (Percent)		
	13.5%	15%	16.5%
12 Percent			
Single-Family Owner-Occupied	71.4 %	70.1 %	68.9 %
Single-Family Rental	15.1	14.9	14.6
Multifamily	13.5	15.0	16.5
Total	100.0	100.0	100.0
10 Percent			
Single-Family Owner-Occupied	73.5 %	72.2 %	70.9 %
Single-Family Rental	13.0	12.8	12.6
Multifamily	13.5	15.0	16.5
Total	100.0	100.0	100.0
8 Percent			
Single-Family Owner-Occupied	75.5 %	74.3 %	73.0 %
Single-Family Rental	11.0	10.7	10.5
Multifamily	13.5	15.0	16.5
Total	100.0	100.0	100.0

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Comparison with the RFS. The Residential Finance Survey is the only mortgage data source that provides unit-based property distributions directly comparable to those reported in Table D.7. Based on RFS data for 1987 to 1991, HUD estimated that, of total dwelling units in properties financed by recently acquired conventional conforming mortgages, 56.5 percent were owner-occupied units, 17.9 percent were single-family rental units, and 25.6 percent were multifamily rental units. Thus, the RFS presents a much lower owner share than does HUD's model. This difference is due mainly to the relatively high level of multifamily originations (relative to single-family originations) during the mid- to late-1980s, which is the period covered by the RFS. As noted earlier, the RFS based on the year 2000 Census should clarify issues related to the rental segment of the mortgage market when it becomes available in the spring of this year (2004).

F. Size of the Conventional Conforming Mortgage Market Serving Low- and Moderate-Income Families

This section estimates the size of the low- and moderate-income market by applying low- and moderate-income percentages to the property shares given in Table D.7. This section essentially accomplishes Steps 2 and 3 of the three-step procedure discussed in Section B.2.

Technical issues and data adjustments related to the low- and moderate-income percentages for owners and renters are discussed in the first two subsections. Then, estimates of the size of the low- and moderate-income market are presented along with several sensitivity analyses. Based on these analyses, HUD concludes that 51–57 percent is a reasonable estimate of the mortgage market's low- and moderate-income share for the four years (2005–2008) when the new goals will be in effect.

1. Low- and Moderate-Income Percentage for Single-Family-Owner Mortgages

a. HMDA Data

The most important determinant of the low- and moderate-income share of the mortgage market is the income distribution of single-family borrowers. HMDA reports annual income data for families who live in metropolitan areas and purchase a home or refinance their existing mortgage.[29] The data cover conventional mortgages below the conforming loan limit, which was $300,700 in 2002. Table D.8 gives the percentage of mortgages originated for low- and moderate-income families for the years 1992–2002. Data are presented for home purchase, refinance, and all single-family-owner loans. The discussion below will often focus on home purchase loans because they typically account for the majority of all single-family-owner mortgages.[30] For each year, a low- and moderate-income percentage is also reported for the conforming market without B&C loans.

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[29] HMDA data are expressed in terms of number of loans rather than number of units. In addition, HMDA data do not distinguish between owner-occupied one-unit properties and owner-occupied 2–4 properties. This is not a particular problem for this section's analysis of owner incomes.

[30] Sensitivity analyses will focus on how the results change during a heavy refinancing environment.

Table D.8

Single-Family-Owner Mortgage Market in Metropolitan Areas by Borrower Income: 1992-2002 HMDA Data

	Home Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C loans	Conforming Market	Market W/O B&C loans	Conforming Market	Market W/O B&C loans
Very-Low-Income Share						
1992	8.7 %	8.7 %	4.5 %	4.4 %	5.8 %	5.8 %
1993	10.8	10.8	5.8	5.7	7.3	7.2
1994	11.9	11.9	11.0	10.6	11.5	11.3
1995	12.0	12.0	12.3	11.7	12.1	11.9
1996	12.7	12.7	13.0	12.2	12.8	12.5
1997	13.0	13.0	14.5	13.4	13.7	13.2
1998	13.3	13.2	11.3	10.4	12.1	11.4
1999	15.0	14.7	16.2	14.8	15.6	14.8
2000	14.7	14.4	19.0	17.6	16.3	15.6
2001	13.6	13.5	12.3	11.7	12.7	12.3
2002	14.1	14.0	12.5	12.0	12.9	12.6
Low- and-Moderate-Income Share						
1992	34.4 %	34.4 %	25.2 %	25.2 %	28.2 %	28.1 %
1993	38.9	38.9	29.3	29.3	32.2	32.1
1994	41.8	41.8	39.9	39.3	41.0	40.7
1995	41.4	41.4	41.1	40.1	41.3	40.9
1996	42.2	42.2	42.7	41.6	42.4	41.9
1997	42.5	42.5	45.0	43.4	43.7	42.9
1998	43.0	42.8	39.7	38.3	40.9	39.9
1999	45.2	44.8	47.2	45.3	46.3	45.1
2000	44.8	44.4	51.6	49.6	47.4	46.3
2001	43.2	42.9	41.8	40.9	42.3	41.6
2002	45.3	45.2	42.3	41.5	43.2	42.6

Source: HMDA data for metropolitan areas. See text for methods of excluding B&C loans from the market. Very-low-income includes borrowers with an income less than or equal to 60 percent of the area median income (AMI). Low- and moderate-income includes less than or equal to AMI.

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Table D.8 also reports similar data for very-low-income families (that is, families with incomes less than 60 percent of area median income). As discussed in Section H, very-low-income families are the main component of the special affordable mortgage market.

Two trends in the income data should be mentioned—one related to the growth in the market's funding of low- and moderate-income families during the 1990s (and particularly the growth since 1998 which was the last year analyzed in HUD's 2000 GSE Rule); and the other related to changes in the borrower income distributions for refinance and home purchase mortgages. Throughout this appendix, ''low- and moderate-income'' will often be referred to as ''low-mod''.

Recent Trends in the Market Share for Lower Income Borrowers. First, focus on the percentages in Table D.8 for the total (both home purchase and refinance) conforming market. After averaging about 30 percent during 1992–93, the percentage of borrowers with less than area median income jumped to 41.0 percent in 1994, and remained above 40 percent through 2002. Over the eight year period, 1994 to 2001, the low-mod share of the total market averaged 43.2 percent (or 42.4 percent if B&C loans are excluded from the market totals).[31] The share of the market accounted for by very-low-income borrowers followed a similar trend, increasing from 6–7 percent in 1992–93 to about 12 percent in 1994 and averaging 13.3 percent during the 1994-to-2002 period (or 12.8 percent if B&C loans are excluded).

Next, consider the percentages for home purchase loans. The share of the home loan market accounted for by less-than-median-income borrowers increased from 34.4 percent in 1992 to 45.3 percent in 2002. Within the 1994-to-2002 period, the low-mod share of the home purchase market averaged 44.6 percent between 1999 and 2002, compared with 42.2 percent between 1994 and 1998. Similarly, the very-low-income share of the home purchase market was also higher during the 1999-to-2002 period than during the 1994-to-1998 period (14.4 percent versus 12.6 percent). Note that within the more recent period, the low-mod share for home purchase loans was particularly high during 1999 (45.2 percent) and 2000 (44.8 percent) before falling slightly in 2001 (43.2 percent), only to rebound again in 2002 (45.3 percent). As shown in Table D.8, the low-mod shares do not change much when B&C home loans are excluded from the market definition; this is because B&C loans are mainly refinance loans.

It appears that the affordable lending market is even stronger today than when HUD wrote the 2000 Rule, which covered market data through 1998. The very-low-income and low-mod percentages were higher during 1999 to 2002 than they were during the earlier period. In addition, when HUD wrote the 2000 Rule, there had been five years (1994–98) of solid affordable lending for lower-income borrowers. Now, with four additional years of data for 1999–2002, there have been nine years of strong affordable lending.

Of course, it is recognized that lending patterns could change with sharp changes in interest rates and the economy. However, the fact that lending to low-income families has remained at a high level for nine years demonstrates that the market has changed in fundamental ways from the mortgage market of the early 1990s. The numerous innovative products and outreach programs that the industry has developed to attract lower-income families into the homeownership and mortgage markets appear to be working and there is no reason to believe that they will not continue to assist in closing troubling homeownership gaps that exist today. As explained in Appendix A, the demand for homeownership on the part of non-traditional borrowers, minorities, and immigrants should help to maintain activity in the affordable portion of the mortgage market. Thus, while economic recession or higher interest rates would likely reduce the low- and moderate-income share of mortgage originations, there is evidence that the low-mod market might not return to the low levels of the early 1990s. There is also evidence that the affordable lending market increased slightly since 1998, although it is recognized that this could be due to the recent period of historically low interest rates.

Refinance Mortgages. In the 2000 Rule, HUD's market projection model assumed that low-mod borrowers represented a smaller share of refinance mortgages than they do of home purchase mortgages. However, as shown in Table D.8, the income characteristics of borrowers refinancing mortgages seem to depend on the overall level of refinancing in the market. During the refinancing wave of 1992 and 1993, refinancing borrowers had much higher incomes than borrowers purchasing homes. For example, during 1993 low- and moderate-income borrowers accounted for 29.3 percent of refinance mortgages, compared to 38.9 percent of home purchase borrowers. While this same pattern was exhibited during the two recent refinancing periods (1998 and 2001–2002), the differentials were much smaller—during 2001–2002 (1998), low-mod borrowers accounted for 42.1 (39.7) percent of refinance loans, compared with 44.3 (43.0) percent of home purchase loans. However, the refinance effect was still evident, as can be seen by the almost seven percentage drop in the low-mod percentage for refinance loans between 2000 (a low refinance year) and 2001 (a high refinance year).

On the other hand, for recent years characterized by a low level of refinancing, the low-mod share of refinance mortgages has been about the same or even greater than that of home purchase mortgages. As shown in Table D.8, there was little difference in the very-low-income and low-mod shares of refinance and home purchase loans during 1995 and 1996. In 1997, 1999, and 2000, the two lower-income shares (*i.e.*, very-low-income and low-mod shares) of refinance mortgages were significantly higher than the lower-income shares of home purchase loans. To a certain extent, this pattern was influenced by the growth of subprime loans, which are mainly refinance loans. If B&C loans are excluded from the market definition, the home purchase and refinance percentages are approximately the same in 1997 and 1999, as well as in 1995 and 1996. (See Table D.8.) Even after excluding all subprime loans from the market definition in 1997 and 1999, the very-low-income and low-mod shares for refinance loans are only slightly less (about one percentage point) than those for home purchase loans.

The year 2000 stands out because of the extremely high lower-income shares for refinance loans. In that year, the low-mod (very-low-income) share of refinance loans was 6.8 (4.3) percentage points higher than the low-mod (very-low-income) share of home purchase loans; this differential is reduced to 5.2 (3.2) percent if B&C loans are excluded from the market definition (see Table D.8). The differential for 2000 is reduced further to 2.8 (1.5) percent if all subprime loans (both A-minus and B&C) are excluded from the market definition (not reported). While the projection model (explained below) for years 2005–08 will input low-mod percentages for the entire conforming market, the model will exclude the effects of B&C loans. Sensitivity analyses will also be conducted showing the effects on the overall market estimates of excluding all subprime loans as well as other loan categories such as manufactured housing loans.

The projection model will initially assume that refinancing is 35 percent of the single-family mortgage market; this will be followed by projection models that reflect heavy refinance environments. Given the volatility of refinance rates from year to year, it is important to conduct sensitivity tests using different refinance rates.

b. Manufactured Housing Loans

Because manufactured housing loans are such an important source of affordable housing, they are included in the mortgage market definition in this appendix—or at least that portion of the manufactured housing market located in metropolitan areas is included, as HMDA doesn't adequately cover non-metropolitan areas. The GSEs have questioned HUD's including these loans in its market estimates; therefore, following the same procedure used in the 2000 Rule, this Appendix will report the effects of excluding manufactured home loans from the market estimates. As explained later, the effect of manufactured housing on HUD's metropolitan area market estimate for each of the three housing goals is approximately one percentage point or less.

As discussed in Appendix A, the manufactured housing market increased rapidly during the 1990s, as units placed in service increased from 174,000 in 1991 to 374,000 in 1999. However, due to various problems in the industry such as lax underwriting and repossessions, volume has declined in recent years, falling to 192,000 in 2001 and to 172,000 in 2002. Still, the affordability of manufactured homes for lower-income families is demonstrated by their average price of $48,800 in 2001, a fraction of the median price for new ($175,000) and existing ($147,800) homes.

[31] The annual averages of the goals-qualifying mortgages reported in this appendix are unweighted averages; for analyses using weighted average see Appendix A.

Many households live in manufactured housing because they simply cannot afford site-built homes, for which the construction costs per square foot are much higher.

Although manufactured home loans cannot be identified in the HMDA data, Randy Scheessele at HUD identified 21 lenders that primarily originated manufactured home loans during 2001 and likely account for most of these loans in the HMDA data for metropolitan areas.[32] HMDA data on home loans originated by these lenders indicate that:[33]

• A very high percentage of these loans—75 percent in 2001—would qualify for the Low- and Moderate-Income Goal,

• A substantial percentage of these loans—42 percent in 2001—would qualify for the Special Affordable Goal, and

• Almost half of these loans—47 percent in 2001—would qualify for the Underserved Areas Goal.[34]

Thus an enhanced presence in this market by the GSEs would benefit many lower-income families. It would also contribute to their presence in underserved rural areas, especially in the South.

2. Low- and Moderate-Income Percentage for Renter Mortgages

Following the 2000 Rule, measures of the rent affordability of the single-family rental and the multifamily rental markets are obtained from the American Housing Survey (AHS) and the Property Owners and Managers Survey (POMS). As explained below, the AHS provides rent information for the stock of rental properties while the POMS provides rent information for flow of mortgages financing that stock. As discussed below, the AHS and POMS data provide very similar estimates of the low- and moderate-income share of the rental market.

a. American Housing Survey Data

The American Housing Survey does not include data on mortgages for rental properties; rather, it includes data on the characteristics of the existing rental housing stock and recently completed rental properties. Current data on the income of prospective or actual tenants has also not been readily available for rental properties. Where such income information is not available, the 1992 GSE Act provides that the rent of a unit can be used to determine the affordability of that unit and whether it qualifies for the Low- and Moderate-Income Goal. A unit qualifies for the Low- and Moderate-Income Goal if the rent does not exceed 30 percent of the local area median income (with appropriate adjustments for family size as measured by the number of bedrooms). Thus, the GSEs' performance under the housing goals is measured in terms of the affordability of the rental dwelling units that are financed by mortgages that the GSEs purchase; the income of the occupants of these rental units is not considered in the calculation of goal performance. For this reason, it is appropriate to base estimates of market size on rent affordability data rather than on renter income data.

A rental unit is considered to be ''affordable'' to low- and moderate-income families, and thus qualifies for the Low- and Moderate-Income Goal, if that unit's rent is equal to or less than 30 percent of area median income. Table D.14 of Appendix D in HUD's 2000 Rule reported AHS data on the affordability of the rental housing stock for the survey years between 1985 and 1997. The 1997 AHS showed that for 1–4 unit unsubsidized single-family rental properties, 94 percent of all units and of units constructed in the preceding three years had gross rent (contract rent plus the cost of all utilities) less than or equal to 30 percent of area median income. For multifamily unsubsidized rental properties, the corresponding figure was 92 percent. The AHS data for the other survey years were similar to the 1997 data.

b. Property Owners and Managers Survey (POMS)

As discussed in the 2000 GSE Rule, there were concerns about using AHS data on rents from the outstanding rental stock to proxy rents for newly mortgaged rental units. HUD investigated that issue further using the POMS.

POMS Methodology. The affordability of multifamily and single-family rental housing backing mortgages originated in 1993–1995 was calculated using internal Census Bureau files from the American Housing Survey-National Sample (AHS) from 1995 and the Property Owners and Managers Survey from 1995–1996. The POMS survey was conducted on the same units included in the AHS survey, and provides supplemental information such as the origination year of the mortgage loan, if any, recorded against the property included in the AHS survey. Monthly housing cost data (including rent and utilities), number of bedrooms, and metropolitan area (MSA) location data were obtained from the AHS file.

In cases where units in the AHS were not occupied, the AHS typically provides rents, either by obtaining this information from property owners or through the use of imputation techniques. Estimated monthly housing costs on vacant units were therefore calculated as the sum of AHS rent and utility costs estimated using utility allowances published by HUD as part of its regulation of the GSEs. Observations where neither monthly housing cost nor monthly rent was available were omitted, as were observations where MSA could not be determined. Units with no cash rent and subsidized housing units were also omitted. Because of the shortage of observations with 1995 originations, POMS data on year of mortgage origination were utilized to restrict the sample to properties mortgaged during 1993–1995. POMS weights were then applied to estimate population statistics. Affordability calculations were made using 1993–95 area median incomes calculated by HUD.

POMS Results. The rent affordability estimates from POMS of the affordability of newly-mortgaged rental properties are quite consistent with the AHS data on the affordability of the rental stock (discussed above). Ninety-six (96) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to low- and moderate-income families, and 56 percent were affordable to very-low-income families. The corresponding percentages for newly-mortgaged multifamily properties are 96 percent and 51 percent, respectively. Thus, these percentages for newly-mortgaged properties from the POMS are similar to those from the AHS for the rental stock. As discussed in the next section, the baseline projection from HUD's market share model assumes that 90 percent of newly-mortgaged, single-family rental and multifamily units are affordable to low- and moderate-income families.[35]

3. Size of the Low- and Moderate-Income Mortgage Market

This section provides estimates of the size of the low- and moderate-income mortgage market. Subsection 3.a provides some necessary background by comparing HUD's estimate made during the 2000 rule-making process with actual experience between 1999 and 2001. Subsection 3.b presents new estimates of the low-mod market while Subsection 3.c reports the sensitivity of the new estimates to changes in assumptions about economic and mortgage market conditions.

a. Actual Market Performance Between 1995 and 2002

Before reporting market projections for the new goals-setting period (2005–08), this section discusses actual market experience for 1995 to 2002, as shown in Table D.9.[36] The 1995 to 1998 market estimates in Table D.9 were reported by HUD in its 2000 Rule while the 1999–2002 estimates are new. The 1999–2002 estimates allow a comparison between HUD's projections and actual market experience. This discussion of the 1995-to-2002 market considers all three housing goals, since the explanations for the differences between the projected and actual market shares are common across the three goals. B&C loans are not included in the market estimates reported in Table D.9. The discussion of Table D.9 will first focus on the market estimates for 1995–1997 and 1999–2000, which, because of their relatively low levels of refinancing, will be referred to as ''home purchase environments''. The discussion will then examine the market

[32] See Randall M. Scheesele, *1998 HMDA Highlights, op. cit.* and ''HUD Subprime and Manufactured Home Lender List'' at *http://huduser.org/datasets/manu.html.*

[33] Since most HMDA data are for loans in metropolitan areas and a substantial share of manufactured homes are located outside metropolitan areas, HMDA data may not accurately state the goals-qualifying shares for loans on manufactured homes in all areas.

[34] While many fewer manufactured homes loans were identified in the 2002 HMDA data, the loans showed similar goals-qualifying shares: low-mod (78.3 percent), special affordable (45.6 percent), and underserved areas (47.5 percent).

[35] In 2002, 75 percent of GSE purchases of single-family rental units and 89 percent of their purchases of multifamily units qualified under the Low- and Moderate-Income Goal, excluding the effects of missing data.

[36] The goals-qualifying shares reported in Table D.9 for 1995–2002 are, of course, estimates themselves; even though information is available from HMDA and other data sources for most of the important model parameters, there are some areas where information is limited, as discussed throughout this appendix.

estimates for the heavy refinance years of 1998, 2001, and 2002. After that, HUD's methods for adjusting the 1995–2001 market data to exclude B&C loans and to incorporate the more expansive definition of Underserved Areas in non-metropolitan areas will be explained.

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Table D.9

Goals-Qualifying Market Shares (Without B&C Loans) 1995-2002

	1995	1996	1997	1998	1999	2000	2001	2002
1. Low-Mod Goal	57 3 %	57 3 %	57.5 %	53.8 %	58.2 %	59.1 %	54.9 %	54 1 %
2. Special Affordable Goal	28.9	28.7	28.8	25.8	29.2	30.0	26.5	25.8
3. Underserved Area Goal (1990-Based)	33.9	33.4	33.9	31.0	33.9	35.3	32.6	32.0

Notes: See the text (a) for the method for excluding B&C loans from the market, and (b) for the explanation for increasing the metropolitan-area-based market share to incorporate underserved areas in non-metropolitan areas. This analysis is based on 1990 census geography for underserved areas. See Section G.4 for analysis of switching to 2000 census geography.

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HUD's market projections in the 2000 Rule were 50–55 percent for the Low- and Moderate-Income Goal, 23–26 percent for the Special Affordable Goal, and 29–32 percent for the Underserved Areas Goal. Thus, the upper bound figures for the market share ranges in the 2000 Rule were lower than actual experience during 1999 and 2000, as well as for the earlier 1995–97 period—for the low-mod estimate, 55 percent versus 57–59 percent; for the special affordable estimate, 26 versus 28–30 percent, and for the underserved areas estimate, 32 percent versus 33–35 percent.

There are three main reasons for the differential between HUD's earlier estimates (made during 2000 based on HMDA data through 1998) and the higher goals-qualifying market shares of recent years. *First,* historically low interest rates and strong economic expansion allowed lower-income families to enter the homeownership and mortgage market during the mid-to-late 1990s. Affordable home purchase lending continued during the past four years, at an even higher rate than earlier, particularly for the two borrower-income goals (low-mod and special affordable). The average low-mod percentage for home purchase loans during 1999–2002 was 44.6 percent, compared with 42.2 percent during 1995–98. Similarly, the average special affordable percentage for home purchase loans during 1999–2002 was 16.7 percent, compared with 15.1 percent during 1995–98. Thus, the home lending market for lower-income borrowers continued to grow. HUD's earlier estimates anticipated smaller shares of new mortgages being originated for lower-income families.

Second, HUD's projection model in the 2000 Rule assumed that refinance loans would have lower goals-qualifying percentages than home purchase loans; this assumption was based on the average home-purchase-refinance differential between 1992 and 1998. As discussed above, this has not been the case during ''home purchase'' years such as 1995–97 and 1999–2000. Thus, the projection model underestimates actual market experience when the goals-qualifying shares of refinance loans turn out to be equal or greater than the goals-qualifying shares of home purchase loans.[37] This issue will be addressed further in the sections that present the new market estimates.

Third, the financing of multifamily properties continued at strong levels during 1999 and 2000. HUD's baseline model in the 2000 Rule assumed a multifamily share of 15 percent, which was lower than the approximately 16–17 percent multifamily share during 1999 and 2000.[38] As discussed throughout this appendix, the multifamily mix fell during the heavy refinance years.

Refinance Years. The goals-qualifying percentages for the heavy refinance years (1998, 2001 and 2002) are lower than those for the other years. For example, the low-mod market share was 54 percent in 1998 and 2002 and 55 percent in 2001—both estimates within HUD's earlier market share range of 50–55 percent.[39] The special affordable market share during 1998, 2001, and 2002 was 26 percent—which places it at the top end of HUD's earlier market range of 23–26 percent. The goals-qualifying percentages during 1998, 2001, and 2002 are, of course, lower than those for the ''home purchase'' years of 1995–97 and 1999–2000. For example, the special affordable market share of approximately 26 percent in 2001 and 2002 was 3–4 percentage points lower than the corresponding share in 1999 and 2000. There are three main reasons for this. First, the goals-qualifying shares for single-family refinance loans fall during heavy refinance years, as middle and upper income borrowers dominate that market. On the other hand, in low refinancing years, the goals-qualifying shares of refinance loans can equal or be greater than the goals-qualifying shares of home purchase loans. Second, and related, is the fact that subprime lending, which is characterized by relatively high goals-qualifying shares, accounts for a smaller portion of the single-family mortgage market during heavy refinance years. Although they were at a record dollar level ($213 billion) during 2002, subprime originations accounted for only 8.6 percent of all single-family mortgages originated that year, compared with about 13 percent during 1999 and 2000. Finally, the high volume of single-family mortgages in a heavy refinance year reduces the share of multifamily rental units. For example, the multifamily share of all financed units was less than 14 percent in 1998, 2001, and 2002,[40] compared to multifamily shares of 19 percent during 1995–97 and 16–17 percent during 1999–2000. Of course, this shift toward single-family loans reduces the goals-qualifying shares of the overall market.

B&C Mortgages. As discussed in Appendix A, the market for subprime mortgages has experienced rapid growth over the past 5–6 years, rising from an estimated $65 billion in 1995 to $174 billion in 2001 and $213 billion in 2002. Table 9 provides goals-qualifying market shares that exclude the B&C portion of the subprime market; or conversely, that include the A-minus portion of the subprime market. This section explains how these ''adjusted'' market shares are calculated from ''unadjusted'' market shares that include B&C loans, using the year 1999 as an example.

Industry sources estimate that the subprime market totaled $160 billion in 1999, or 12.5 percent of all mortgages ($1,285 billion) originated that year.[41] In terms of credit risk, this $160 billion includes a wide range of mortgage types. ''A-minus'' loans, which represent at least half of the subprime market, make up the least risky category.[42] As discussed in Appendix A, the GSEs are involved in this market both through specific program offerings and through purchases of securities backed by subprime loans (including B&C loans as well as A-minus loans). The B&C loans experience much higher delinquency rates than A-minus loans.[43]

The procedure for excluding B&C mortgages from estimated ''unadjusted'' market shares for goals-qualifying loans in

[37] The 1995–2002 goals qualifying percentages for single-family mortgages are based on HMDA data for all (both home purchase and refinance) mortgages. Thus, the implicit refinance rate is that reported by HMDA for conventional conforming mortgages.

[38] The accuracy of a single-family portion of HUD's model can be tested using HMDA data. The number of single-family-owner loans reported to HMDA for the years 1999–2002 can be compared with the corresponding number predicted by HUD's model. Single-family-owner loans reported to HMDA during 1999 were 87 percent of the number of loans predicted by HUD's model; comparable percentages for 2000, 2001, and 2002 were 84 percent, 89 percent, and 80 percent, respectively. Studies of the coverage of HMDA data through 1996 conclude that HMDA covers approximately 85 percent of the conventional conforming market, which suggests that HUD's model produces reasonable estimates of single-family-owner loans. For analysis of HMDA coverage, see Randall M. Scheesele, *HMDA Coverage of the Mortgage Market, op. cit.*

[39] As discussed in Section C.6 of this appendix, there is some uncertainty about the multifamily mix for the year 2002. The goals-qualifying shares reported in Table D.9 assume $67.7 billion (the HUD New estimate) and an average loan amount of $37,275; this produces a multifamily mix of 10.9 percent. Section C.6 discussed several other multifamily market and average loan amount estimates sfor 2002, each with a specific multifamily mixes. The low-mod, special affordable, and underserved areas shares for the other multifamily mixes discussed in Section C.6 are as follows: 11.5 percent (54.4, 26.0, 32.25), 11.3 percent (54.3, 25.9, 32.1), 11.0 percent (54.2, 25.8, 32.0), 10.7 percent (54.0, 25.7, 31.9), 10.4 percent (53.9, 25.6, 31.8), and 10.1 percent (53.8, 25.5, 31.8).

[40] Although data are not available yet, the multifamily share for 2003 will be lower than the approximately 11 percent in 2002. Senstivity analyses with lower multifamily mixes are provided below.

[41] Estimates of the subprime market for other recent years are as follows (dollar and market share): 1995 ($65 billion, 10 percent); 1996 ($96.5 billion, 12.3 percent); 1997 ($125 billion, 15 percent); 1998 ($150 billion, 10 percent; 1999 ($160 billion, 12.5 percent); 2001 ($173 billion, 8.5 percent); 2002 ($213 billion, 8.6 percent). The uncertainty about what these various estimates include should be emphasized; for example, they may include second mortgages and home equity loans as well as first mortgages, which are the focus of this analysis. The source for these estimates is *Inside Mortgage Finance* (various years).

[42] The one-half assumption for A-minus loans is conservative because it probably underestimates (overestimates) the share of A-minus (B&C) loans. According to data obtained by the Mortgage Information Corporation (see next footnote), 57 percent of all subprime loans were labeled A-minus (as of September 30, 2000). According to Inside *B&C Lending,* which is published by Inside Mortgage Finance, the A-minus share of the subprime market was 61.6 percent in 2000, 70.7 percent in 2001 (see March 11, 2002 issue), 75 percent in 2002 (see the September 15, 2003 issue), and 82 percent during the first nine months of 2003 (see the December 8, 2003 issue).

[43] The Mortgage Information Corporation (MIC) reports the following serious delinquency rates (either 90 days past due or in foreclosure) by type of subprime loan: 3.36 percent for A-minus; 6.67 percent for B; 9.22 percent for C; and 21.03 percent for D. The D category accounted for only 2 percent of subprime loans and of course, is included in the ''B&C'' category referred to in this appendix. By comparison, MIC reports a seriously delinquent rate of 3.63 percent for FHA loans. See MIC, *The Market Pulse,* Winter 2001, page 6. Also see ''Subprime Mortgage Delinquencies Inch Higher, Prepayments Slow During Final Months of 1998'', *Inside MBS & ABS: Inside MBS & ABS,* March 12, pages 8–11, where it is reported that fixed-rate A-minus loans have delinquency rates similar to high-LTV (over 95 percent) conventional conforming loans.

1999 combined information from several sources. First, the $160 billion estimate for the subprime market was multiplied by 79.4 percent to arrive at an estimate of $127 billion for subprime loans less than the year 1999 conforming loan limit of $240,000; the 79.4 percent estimate for the conforming market was based on HMDA data for mortgages originated by subprime lenders. The $127 billion was reduced by one-half to arrive at an estimate of $63.5 billion for the conforming B&C market; with an average loan amount of $78,801(obtained from HMDA data, as discussed below), the $63.5 billion represented approximately 806,081 B&C loans originated during 1999 under the conforming loan limit.

HMDA data was used to provide an estimate of the portion of these 806,081 B&C loans that would qualify for each of the housing goals. HMDA data does not identify subprime loans, much less divide them into their A-minus and B&C components. As explained in Appendix A, Randall Scheessele in HUD's Office of Policy Development and Research has identified almost 200 HMDA reporters that primarily originate subprime loans. The goals-qualifying percentages of the loans originated by these subprime lenders in 1999 were as follows: 63.0 percent qualified for the Low- and Moderate-Income Goal, 32.5 percent for the Special Affordable Goal, and 47.0 percent for the Underserved Areas Goal.[44] Applying the goals-qualifying percentages to the estimated B&C market total of 806,081 gives the following estimates of B&C loans that qualified for each of the housing goals in 1999: Low- and Moderate Income (507,831), Special Affordable (261,976), and Underserved Areas (378,858).

Adjusting HUD's model to exclude the B&C market involves subtracting the above four figures' one for the overall B&C market and three for B&C loans that qualify for each of the three housing goals '' from the corresponding figures estimated by HUD for the total single-family and multifamily market inclusive of B&C loans. HUD's model estimates that 10,638,797 single-family and multifamily units were financed during 1999; of these, 6,229,569 (58.6 percent) qualified for the Low- and Moderate-Income Goal, 3,133,701 (29.5 percent) for the Special Affordable Goal, and 3,711,271 (34.9 percent) for the Underserved Areas Goal. Deducting the B&C market estimates produces the following adjusted market estimates: a total market of 9,983.276, of which 5,721,738 (58.2 percent) qualified for the Low- and Moderate-Income Goal, 2,871,725 (29.2 percent) for the Special Affordable Goal, and 3,332,413 (33.9 percent) for the Underserved Areas Goal.

As seen, the low-mod market share estimate exclusive of B&C loans (58.2 percent) is practically the same as the original market estimate (58.6 percent), as is also the special affordable market estimate (29.5 percent versus 29.2 percent). This occurs because the B&C loans that were dropped from the analysis had similar low-mod and special affordable percentages as the overall (both single-family and multifamily) market. For example, the low-mod share of B&C loans was projected to be 63.0 percent and HUD's market model projected the overall low-mod share to be 58.6 percent. Thus, dropping B&C loans from the market totals does not change the overall low-mod share of the market.

The situation is different for the Underserved Areas Goal. Underserved areas account for 47.0 percent of the B&C loans, which is a higher percentage than the underserved area share of the overall market (34.9 percent). Thus, dropping the B&C loans leads to a reduction in the underserved areas market share of 1.0 percentage points, from 34.9 percent to 33.9 percent.

Dropping B&C loans from HUD's model changes the mix between rental and owner units in the final market estimate. Based on assumptions about the size of the owner and rental markets for 1999, HUD's model calculates that single-family-owner units accounted for 71.4 percent of total units financed during 1999. Dropping the B&C owner loans, as described above, reduces the owner percentage of the market by 2.3 percentage points to 69.1 percent. Thus, another way of explaining why the goals-qualifying market shares are not affected so much by dropping B&C loans is that the rental share of the overall market increases as the B&C owner units are dropped from the market. Since rental units have very high goals-qualifying percentages, their increased importance in the market partially offsets the negative effects on the goals-qualifying shares of any reductions in B&C owner loans. In fact, this rental mix effect would come into play with any reduction in owner units from HUD's model.

Dropping all subprime loans (both A-minus and B&C) from the market definition would lead to similar results for the Low-Mod and Special Affordable Goals '' little change in the market estimates for the reasons given above (the low-mod estimate falls to 57.8 percent and the special affordable share falls to 28.9 percent). The market estimate for the Underserved Areas Goal would fall an additional 1.2 percentage points to 32.7 percent (or 2.2 percentage points lower than the overall estimate of 34.9 percent).

As discussed in the 2000 Rule, there are caveats that should be mentioned concerning the above adjustments for the B&C market for 1999. The adjustment for B&C loans depends on several estimates relating to the 1999 mortgage market, derived from various sources. Different estimates of the size of the B&C market in 1999 or the goals-qualifying shares of the B&C market could lead to different estimates of the goals-qualifying shares for the overall market. The goals-qualifying shares of the B&C market were based on HMDA data for selected lenders that primarily originate subprime loans; since these lenders are likely originating both A-minus and B&C loans, the goals-qualifying percentages used here may not be accurately measuring the goals-qualifying percentages for only B&C loans. The above technique of dropping B&C loans also assumes that the coverage of B&C and non-B&C loans in HMDA's metropolitan area data is the same; however, it is likely that HMDA coverage of non-B&C loans is higher than its coverage of B&C loans.[45] Despite these caveats, it also appears that reasonably different estimates of the various market parameters would not likely change, in any significant way, the above estimates of the effects of excluding B&C loans in calculating the goals-qualifying shares of the market. As discussed below, HUD provides a range of estimates for the goals-qualifying market shares to account for uncertainty related to the various parameters included in its projection model for the mortgage market.

Adjustment for Non-Metropolitan Areas. HUD first estimated the underserved area percentage for 1999–2002 based on single-family-owner parameters for metropolitan areas. It was necessary to adjust these metropolitan-based market shares upward to reflect the fact that underserved counties account for a much larger portion of non-metropolitan areas than underserved census tracts do of metropolitan areas. The adjustment averaged about 1.5 percentage points; the method for deriving the upward adjustment is explained in Section G.3 below.

Manufactured Housing Loans. HUD includes the effects of manufactured housing loans (at least those financing properties in metropolitan areas) in its market estimates. However, sensitivity analyses are conducted to determine the effects of excluding these loans. Excluding these loans from the market definition would reduce the 1995–2001 estimates of the three goals-qualifying market shares by approximately one percentage point. Assuming a home purchase environment (1995–97 and 1999–2000) and a constant mix of owner and rental properties, excluding manufactured housing loans (as well as loans less than $15,000) would reduce the goals-qualifying shares reported in Table D.9 roughly as follows: Low- and Moderate-Income Goal by 1.2 percentage points, Special Affordable Goal by 1.0 percentage points, and Underserved Areas Goal by 0.8 percentage point. (The method for calculating these reductions is explained in Section F.3b below.) Dropping manufactured housing from the market totals would increase the rental share of the

[44] The goals-qualifying percentages for subprime lenders are much higher than the percentages (46.3 percent, 18.3 percent, and 28.2 percent, respectively) for the overall single-family conventional conforming market in 1999. For further analysis of subprime lenders, see Randall M. Scheessele, *1998 HMDA Highlights, op. cit.*

[45] Dropping B&C loans in the manner described in the text results in the goals-qualifying percentages for the non-B&C market being underestimated since HMDA coverage of B&C loans is less than that of non-B&C loans and since B&C loans have higher goals-qualifying shares than non-B&C loans. For instance, the low-mod shares of the market reported in Table D.9 underestimate (to an unknown extent) the low-mod shares of the market inclusive of B&C loans; so reducing the low-mod owner shares by dropping B&C loans in the manner described in the text would provide an underestimate of the low-mod share of the non-B&C owner market. A study of 1997 HMDA data in Durham County, North Carolina by the Coalition for Responsible Lending (CRL) found that loans by mortgage and finance companies are often not reported to HMDA. For a summary of this study, see ''Renewed Attack on Predatory Subprime Lenders'' in *Fair Lending/CRA Compass,* June 9, 1999.

mortgage market, which would tend to increase the goals-qualifying shares and thus partially offset the reductions reported above. In addition, the estimated reductions in goals-qualifying shares due to excluding manufactured housing are even lower during the heavy refinance years such as 1998 and 2001. It should also be mentioned that manufactured housing in non-metropolitan areas is not included in HUD's analysis due to lack of data; including that segment of the market would increase the goals-qualifying shares of the overall market. Thus, the analyses of manufactured housing reported above and throughout this proposed Rule pertain only to manufactured housing loans in metropolitan areas, as measured by loans originated by the 21 manufactured housing lenders identified by HUD.

b. Estimates of the Low- and Moderate-Income Market

This section provides HUD's estimates for the size of the low- and moderate-income mortgage market that will serve as a proxy for the four-year period (2005–2008) when the new housing goals will be in effect. Three alternative sets of projections about property shares and rental property low- and moderate-income percentages are given in Table D.10. Case 1 projections represent the baseline and intermediate case; it assumes that investors account for 10 percent of the single-family mortgage market. Case 2 assumes a lower investor share (8 percent) based on HMDA data and slightly more conservative low- and moderate-income percentages for single-family rental and multifamily properties (85 percent). Case 3 assumes a higher investor share (12 percent) consistent with Follain and Blackley's suggestions.

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Table D.10

Alternative Assumptions for Single-Family Rental and Multifamily Mortgage Shares

	Case 1	Case 2	Case 3
1. Single-Family Mortgage Shares			
Single-Family Owner-Occupied	88.0%	90.0%	85.6%
Single-Family 2-4	2.0%	2.0%	2.4%
Single-Family 1-4 Investor	10.0%	8.0%	12.0%
2. Units Per Single-Family Mortgage			
Single-Family 2-4	2.25	2.25	2.25
Single-Family 1-4 Investor	1.35	1.35	1.40
3. Percentage Affordable at Area Median Income (AMI)			
Single-Family Rental	90.0%	85.0%	95.0%
Multifamily	90.0%	85.0%	95.0%
4. Percentage Underserved (1990-Based)			
Single-Family Rental	42.5%	40.0%	45.0%
Multifamily	48.0%	46.0%	48.0%
5. Percent Affordable at 60% of AMI			
Single-Family Rental	50.0%	47.0%	53.0%
Multifamily	47.0%	44.0%	50.0%
6. Percentage Low-Income in Low-Income Areas:			
Single-Family Rental	8.0%	6.0%	8.0%
Multifamily	11.0%	10.0%	12.0%

Note: The underserved area shares in # 4 are based on 1990 census tracts. See text for discussion of "2000-Based" underserved area shares based on 2000 census tracts.

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Because single-family-owner units account for about 70 percent of all newly mortgaged dwelling units, the low- and moderate-income percentage for owners is the most important determinant of the total market estimate. Thus, Table D.11 provides market estimates for different low-mod percentages for the owner market as well as for different multifamily mix percentages—15.0 percent bracketed by 13.5 percent and 16.5 percent, which are the same multifamily mixes assumed in the 2000 Rule. The low-mod market estimates in Table D.11 exclude B&C loans, in the same manner as discussed earlier for the 1995–2001 market estimates. This is explained further below.

Table D.11

Low- and Moderate-Income Market Estimates Sensitivity Analysis

Case 1 with Different Percentages for Single-Family Owner-Occupied's with Income Less than AMI:		Multifamily Mix (Percent) 13.5%	15%	16.5%
Single-Family: [a]	47%	58.4 %	59.0 %	59.6 %
	46%	57.6	58.2	58.8
	45%	56.8	57.5	58.1
	44%	56.1	56.7	57.3
	43%	55.3	55.9	56.6
	42%	54.5	55.2	55.8
	41%	53.7	54.4	55.1
	40%	52.9	53.6	54.3
	39%	52.2	52.9	53.6
	38%	51.4	52.1	52.8
	37%	50.6	51.3	52.0
	36%	49.8	50.6	51.3
	35%	49.0	49.8	50.5
	34%	48.3	49.0	49.8
Single-Family:	43% with:			
	Case 1 (above)	55.3 %	55.9 %	56.6 %
	Case 2	53.9	54.4	55.0
	Case 3	57.1	57.8	58.5
Single-Family:	40% with:			
	Case 1 (above)	52.9 %	53.6 %	54.3 %
	Case 2	51.5	52.1	52.8
	Case 3	54.8	55.5	56.2
Single-Family:	36% with:			
	Case 1 (above)	49.8 %	50.6 %	51.3 %
	Case 2	48.4	49.1	49.7
	Case 3	51.7	52.5	53.3

[a] See text for interpretation of single-family-owner percentages. AMI is area median income.

Table D.11 assumes a refinance rate of 35 percent, which means that the table reflects home purchase or low-refinancing environments. After presenting these results, market estimates reflecting heavy refinance environments will be presented. Because of the increase in single-family mortgages, the multifamily share of the mortgage market typically falls during a heavy refinance environment; therefore, several sensitivity analyses using lower multifamily mixes are examined below.

In the 2000 Rule, HUD assumed that the low-mod share of refinance loans was three percentage points lower than the low-mod share of borrowers purchasing a home. However, as discussed earlier, the low-mod share of refinance loans has equaled or been greater than the low-mod share of home purchase loans during recent home purchase environments such as 1995–97 or 1999–2000; thus, the assumption of a lower low-mod shares for refinance loans is initially dropped for this analysis but will be reintroduced during the sensitivity analysis and during the discussion of heavy refinance environments.

There are two ways to view the single-family-owner low-mod percentages reported in the first column of Table D.11. A *first approach* would be to view them as representing low-mod percentages of only the home purchase market. For example, a low-mod percentage for home purchase loans of 43 percent (as it was say in 1997)—combined with the assumption of an equal low-mod share for refinance loans (*i.e.*, also 43 percent) and with the other model assumptions (such as a multifamily mix of 15 percent)—produces an estimate of 55.9 percent for the low-mod share of the overall (owner and rental) market, excluding B&C loans. Thus, the reader can view Table D.11 as showing the overall low-mod market estimate once the reader specifies his or her views about the low-mod share of the single-family home purchase market (given the other model assumptions). In this case, if the reader believes that the low-mod share of refinance loans should be lower than that for home purchase loans, the reader simply has to multiply the differential amount by 0.35 (which is the refinance share of single-family-owner loans) and 0.722 (which is the single-family-owner share of all dwelling units in the baseline model that assumes a 15 percent multifamily mix). For example, applying the assumption in the 2000 Rule that the low-mod share is three percentage points lower for refinance loans would reduce the overall low-mod share of the market by 0.8 percentage points (3.0 times 0.35 times 0.722). In this manner, the reader can easily adjust the market estimates reported in Table D.11 to incorporate his or her own views about differences in the low-mod share of home purchase and refinance loans.

A *second approach* would be to view the low-mod percentages (in the first column of Table D.11) as representing low-mod shares for the overall single-family-owner market, including both home purchase and refinance loans. This approach does not specify separate low-mod percentages for home purchase and refinance loans, but rather focuses on the overall single-family-owner environments. Thus, it allows for mortgage market environments where the low-mod share of refinance loans is greater than the low-mod share for home purchase loans. For example, a low-mod percentage for single-family-owner loans of 47 percent would reflect the year 2000 environment, which had a low-mod home purchase percentage of 45 percent combined with a higher low-mod refinance percentage of 52 percent. Of course, the 47 percent low-mod share for the overall single-family-owner market could be consistent with other combinations of low-mod shares for home purchase and refinance loans. In this case, a 47 percent assumption for the overall single-family-owner market produces an estimate of 59.0 percent for the low-mod share of the overall (owner and rental) market, excluding B&C loans.

While both approaches will be discussed below, most of the discussion will focus on the first approach. It should be noted that several low-mod percentages of the owner market are given in Table D.11 to account for different perceptions of that market. Essentially, HUD's approach throughout this appendix is to provide several sensitivity analyses to illustrate the effects of different views about the goals-qualifying share of the single-family-owner market. This approach recognizes that there is some uncertainty in the data and that there can be different viewpoints about the various market definitions and other model parameters.

Market Estimates. As shown in Table D.11, the market estimate is: 57–58 percent if the owner percentage is 45 percent (home purchase share for 1999, 2000, and 2002); 55–57 percent if the owner percentage is 43 percent (home purchase share for 1998 and 2001); and 54–55 percent if the owner percentage is 42 percent (home purchase average from 1995–97). If the low- and moderate income percentage for home purchase loans fell to 38 percent—or five percentage points from its 1995–2001 average level of 43 percent—then the overall market estimate would be about 52 percent. Thus, 52 percent is consistent with a rather significant decline in the low-mod share of the single-family home purchase market. If the low-mod percentage for home purchase loans fell further to 35 percent (or 8 percentage points below its 1995–2002 average of 43 percent), the overall market estimate would still be approximately 50 percent. Under the baseline projection, the home purchase percentage can fall as low as 34 percent—about four-fifths of the 1995–2002 average—and the low- and moderate-income market share would still be 49–50 percent.

The market estimates reported in Table D.11 for Case 2 and Case 3 bracket those for Case 1 (the baseline). The smaller single-family rental market and lower low- and moderate-income percentages for rental properties result in the Case 2 estimates being about one and a half percentage points below the Case 1 estimates. Conversely, the higher percentages under Case 3 result in estimates of the low-mod market approximately two percentage points higher than the Case 1 estimates. As discussed in Section D, the baseline Case 1 is a reasonable approach for estimating the market shares.

Multifamily Mix. The volume of multifamily activity is also an important determinant of the size of the low- and moderate-income market. HUD is aware of the uncertainty surrounding projections of the multifamily market and consequently recognizes the need to conduct sensitivity analyses to determine the effects on the overall market estimate of different assumptions about the size of that market. As discussed in Section C of this appendix, the average multifamily share between 1991 and 2002 was approximately 16 percent, so 15 percent represents a slightly more conservative baseline. In addition, in single-family home purchase (or low refinancing) environments, the multifamily mix has typically been above 16 percent. Therefore, when considering single-family home purchase environments, it is probably more appropriate to focus on the top two multifamily mixes (15 percent and 16.5 percent) in Table D.11. Still, given the uncertainty surrounding the size of the multifamily market, it is useful to consider the effects of lower multifamily mix assumptions, even in a home purchase environment. Assuming a 13.5 percent multifamily mix reduces the overall low-mod market estimates by 0.6–0.7 percentage points compared with a 15 percent mix, and by 1.2–1.4 percentage points compared with a 16.5 percent mix. For example, when the low-mod share of the home purchase market is at 43 percent, the low-mod share of the overall market is 55.3 percent assuming a 13.5 percent multifamily mix, compared with 55.9 (56.6) percent assuming a 15 (16.5) percent multifamily mix. The next section examines the effects of multifamily mixes lower than 13.5 percent.

Heavy Refinancing Environments. As shown earlier in Table D.11, the low-mod share of the overall market declines when refinances dominate the market. Compared with low-mod market shares of 57–59 percent during recent home purchase environments (1995–97 and 1999–2000), the low-mod share declined to 54–55 percent during 1998, 2001, and 2002—three years where refinancing dominated the single-family-owner mortgage market. As explained earlier, this decline in the low-mod market share during heavy refinancing periods is due to (a) a decline in the low-mod share of single-family refinance mortgages as middle- and upper-income borrowers dominate the refinance market; (b) a decline in the relative importance of the subprime market; and (c) a decline in the share of multifamily mortgages. For example, during 2001, the refinance share of low-mod loans fell to 41.8 percentage points (from about 49 percent during 1999 and 2000); the subprime share of the single-family market fell to 8.5 percent (from about 13 percent during 1999 and 2000); and the multifamily share of the market fell to 13.4 percent (from about 16 percent during 1999 and 2000). Similarly during 2002, the low-mod share of refinance loans was 42.3 percent, the subprime share of the market was 8.6 percent, and the multifamily mix was approximately 11 percent.

Several assumptions were changed to incorporate a refinance environment into the projection model for 2005–08. The refinance share of single-family mortgages was increased to 65 percent, or almost double the 35 percent refinance rate assumed in the projection model for a ''home purchase'' environment. The market share for subprime loans was assumed to be 8.5 percent and the multifamily mix, 13.5 percent. The low-mod share for refinance loans was assumed to be 39 percent, or four percentage points below the assumed low-mod share of home purchase loans (which was set at the 1998 and 2002 level of 43 percent). Under these assumptions, the overall low-mod market share (excluding B&C loans) was projected to be 53.4 percent—or about 1–2 percentage points below the market shares estimated for 1998, 2001, and 2002. If the multifamily mix is reduced further to 12 (10) percent, the market projection falls to 52.7 (51.8) percent. If the single-family low-mod percentages are reduced to 41 percent (home purchase) and 37 percent (refinance), and the multifamily mix is 12 (10) percent, the overall low-mod market share falls 51.1 (50.2) percent. Since refinance environments are characterized by low interest rates, it is unlikely that the low-mod share of the home purchase market would fall below 41 percent, given that it has averaged 43 percent over the past eight years.

To further examine this issue in the context of an actual refinance environment, the various parameters (*e.g.*, low-mod share of home purchase and refinance loans for owner and rental properties, the subprime share of the market, etc.) for the year 2002 were used except that the multifamily mix was lowered from the actual level in 2002. During 2002, there was a three percentage point differential between the low-mod share of home purchase loans (45.3 percent) and refinance loans (42.3 percent). As reported earlier, the low-mod share of the 2002 market was estimated to be 54.4 percent assuming a multifamily mix of 11.5 percent, and 10.9 percent assuming a multifamily mix of 10.9 percent. The multifamily mix for a year such as 2003, characterized by single-family originations of $3.3 trillion, will certainly be lower than the 11 percent multifamily mix of 2002, characterized by $2.5 trillion in single-family originations. Thus, this sensitivity analysis reduces the multifamily mix for the 2002 refinance environment. The low-mod shares vary with the multifamily mix as follows: (53.8 percent low-mod share, 10 percent multifamily mix); (53.3 percent, 9 percent); (52.9 percent, 8 percent); 52.5 percent, 7 percent); and (52.1 percent, 6 percent). Thus, under the actual 2002 assumptions, the low-mod share drops by about one-half percentage point for each one percentage point reduction in the multifamily mix.[46] The low-share remains above 52 percent even if the multifamily mix falls to 6 percent.[47]

The various market estimates presented in Table D.11 for a home purchase environment and reported above for a refinance environment are not all equally likely. Most of them equal or exceed 52 percent. In the home purchase environment, estimates below 52 percent would require the low-mod share of the single-family-owner market for home purchase loans to drop to 36–37 percent, which would be 6–7 percentage points below the average. Dropping below 52 percent would be more likely in a heavy refinance environment, as the actual estimated market shares during 1998, 2001, and 2002 were in the 54–55 percent range. However, sensitivity analyses of a refinance environment showed that a 52 percent low-mod market share was consistent with market assumptions more adverse than the heavy refinance years of 1998, 2001, and 2002.

B&C Loans. There are two possible approaches for adjusting for the effects of B&C loans in the projection model. *First,* readers could choose a single-family low-mod percentage (that is, one of the percentages in the first column in Table D.11) that they believe is adjusted for B&C loans and then obtain a rough estimate of the overall market estimate from the second to fourth columns corresponding to different multifamily mixes. For instance, if one believes the appropriate single-family-owner percentage adjusted for B&C loans (or adjusted for any other market sectors that the reader thinks appropriate) is 39 percent, then the low-mod market estimate is 52.7 percent assuming a multifamily mix of 15 percent. While intuitively appealing, such an approach would provide inaccurate results, as explained next.

Second, readers could choose a single-family-owner percentage directly from HMDA data that is unadjusted for B&C loans and then rely on HUD's methodology (described below) for excluding the effects of B&C loans. This is the approach taken in Table D.11. The advantage of the second approach is that HUD's methodology makes the appropriate adjustments to the various property shares (*i.e.*, the owner versus rental percentages) that result from excluding single-family B&C loans from the analysis. According to HUD's methodology, dropping B&C loans would reduce the various low-mod market estimates by less than half of a percentage point. This minor effect is due to (a) the fact that the low-mod share of B&C loans is similar to that of the overall market; and (b) the offsetting effects of the increase in the rental market share when single-family B&C loans are dropped from the market totals.

As noted above, if one assumes the single-family-owner percentages in the first column of Table D.11 are unadjusted for B&C loans, then the overall low-mod market estimates must be adjusted to exclude these loans. B&C loans were deducted in HUD's projection model using the same procedure described earlier for the 1995–2002 market estimation models. The effects of deducting the B&C loans from the projection model can be illustrated using an example of a low-mod percentage of 43 percent for single-family-owner loans. Again, as explained earlier, this 43 percent figure could reflect a mortgage market environment where home purchase and refinance loans had similar low-mod percentages (*i.e.*, 43 percent) or a mortgage market environment where home purchase and refinance loans had different low-mod market percentages that together resulted in a 43 percent average for the single-family-owner market.

As Table D.11 shows, a 43 percent low-mod share for owner mortgages translates into an overall low-mod market share of 55.9 percent. It is assumed that the subprime market accounts for 12 percent of all mortgages originated, which would be $204 billion based on $1,700 billion for the mortgage market. This $204 billion estimate for the subprime market is reduced by 20 percent to arrive at $163.2 billion for subprime loans that will be less than the conforming loan limit. This figure is reduced by one-half to arrive at $81.6 billion for the conforming B&C market; with an average loan amount of $129,899; the $81.6 billion represents 628,180 B&C loans projected to be originated under the conforming loan limit.

Following the procedure discussed in Section F.3a, the low-mod share of the market exclusive of B&C loans is estimated to be 55.9 percent (see Table D.11), which is only slightly lower than the original (unadjusted) estimate of 56.1 percent.[48] As noted earlier, this occurs because the B&C loans that were dropped from the analysis had similar low-mod percentages as the overall (both single-family and multifamily) market (58.6 percent for excluded B&C loans versus 56.1 percent for the overall, unadjusted market estimate). The impact of dropping B&C loans is larger when the overall market share for low-mod loans is smaller. If the low-mod share for single-family owners is assumed to be 38 percent, dropping B&C loans would reduce the low-mod market share by 0.4 percentage points, from 52.5 percent to the 52.1 percent reported in Table D.11. Still, dropping B&C loans from the market totals does not change the overall low-mod share of the market appreciably.

Dropping B&C loans from HUD's projection model changes the mix between rental and owner units in the final market estimate;

[46] This analysis assumes the 2002 refinance rate of 62 percent; if the refinance rate is increased to 65–68 percent (current predictions for 2003), then the overall low-mod market percentages in this sentence would decline by about 0.1 percentage point. If there were a four (five) percentage point difference between the low-mod shares of home purchase and refinance loans, rather than a three percentage point difference as in 2002, then the overall low-mod market percentages in this sentence would decline by about 0.5 (1.0) percentage point.

[47] For a given multifamily mix, the low-mod shares of the market are higher under the simulations based on the 2002 environment, as compared with the simulations reported in the above paragraph based on the projection model. The reason for this is that the low-mod shares for the various property types were higher during 2002 than those assumed in the projection model.

[48] 1999–2002 HMDA data for subprime lenders were used to provide an estimate of 58.6 percent for the portion of the B&C market that would qualify as low- and moderate-income. Applying the 58.6 percentage to the estimated B&C market total of 628,180 gives an estimate of 367,957 B&C loans that would qualify for the Low- and Moderate-Income Goal. Adjusting HUD's model to exclude the B&C market involves subtracting the 628,180 B&C loans and the 367,957 B&C low-mod loans from the corresponding figures estimated by HUD for the total single-family and multifamily market inclusive of B&C loans. HUD's projection model estimates that 10,632,145 single-family and multifamily units will be financed and of these, 5,962,527 (56.1 percent) will qualify for the Low- and Moderate-Income Goal. Deducting the B&C market estimates produces the following adjusted market estimates: a total market of 10,003,964 of which 5,594,570 (55.9 percent) will qualify for the Low- and Moderate-Income Goal.

rental units accounted for 29.6 percent of total units after dropping B&C loans compared with 27.8 percent before dropping B&C loans. Since practically all rental units qualify for the low-mod goal, their increased importance in the market partially offsets the negative effects on the goals-qualifying shares of any reductions in B&C owner loans.

A similar analysis can be used to demonstrate the effects of deducting the remaining, A-minus portion of the subprime market from the market estimates. Of course, deducting A-minus loans as well as B&C loans is equivalent to deducting all subprime loans from the market. In the example given above (43 percent low-mod percentage for owners), deducting all subprime loans would further reduce the overall low-mod market estimate to 55.7 percent. Thus, the unadjusted low-mod market estimate is 56.1 percent, the estimate adjusted for B&C loans is 55.9 percent (reported in Table D.11), and the estimate adjusted for all subprime loans is 55.7 percent.

Section F.3.a discussed several caveats concerning the analysis of subprime loans. It is not clear what types of loans (*e.g.*, first versus second mortgages) are included in the subprime market estimates. There is only limited data on the borrower characteristics of subprime loans and the extent to which these loans are included in HMDA is not clear. Still, the above analysis demonstrates that the projection model can incorporate the effects of dropping B&C loans (or even all subprime loans) from the final market estimates.

Manufactured Housing Loans. Excluding manufactured housing loans (as well as small loans less than $15,000) reduces the overall market estimates reported in Table D.11 by one-percentage point. This is estimated as follows. First, excluding these loans reduces the unadjusted low-mod percentage for single-family-owner mortgages in metropolitan areas by about 1.8 percentage points, based on analysis of recent home purchase environments (1995–97 and 1999 and 2000). Multiplying this 1.8 percentage point differential by the property share (0.722) of single-family-owner units yields 1.3 percentage points, which serves as a proxy for the reduction in the overall low-mod market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall low-mod market share, thus partially offsetting the 1.3 percent reduction. The net effect is probably a reduction of about one percentage point.

The above analysis of the effects of dropping different categories of loans from the market suggest that 52–58 percent is a reasonable range of estimates for the low- and moderate-income market. This range covers markets without B&C and allows for market environments that would be much less affordable than recent market conditions. The next section presents additional analyses related to market volatility and affordability conditions. After that, a one-percentage point downward adjustment is made to the 52–58 percent market range to reflect the anticipated effects of re-benchmarking metropolitan area incomes based on 2000 Census data and incorporating the new OMB definitions for metropolitan areas.

c. Economic Conditions, Market Estimates, and the Feasibility of the Low- and Moderate-Income Housing Goal

During the 2000 rule-making, there was a concern that the market share estimates and the housing goals failed to recognize the volatility of housing markets and the existence of macroeconomic cycles. There was particular concern that the market shares and housing goals were based on a period of economic expansion accompanied by record low interest rates and high housing affordability. This section discusses these issues, noting that the Secretary can consider shifts in economic conditions when evaluating the performance of the GSEs on the goals, and noting further that the market share estimates can be examined in terms of less favorable market conditions than have existed during the 1993 to 2002 period.

Volatility of Market. Changing economic conditions can affect the validity of HUD's market estimates as well as the feasibility of the GSEs' accomplishing the housing goals. The volatile nature of the mortgage market in the past few years suggest a degree of uncertainty around projections of the origination market. Large swings in refinancing, consumers switching between adjustable-rate mortgages and fixed-rate mortgages, and increased first-time homebuyer activity due to record low interest rates, have all characterized the mortgage market during the nineties. These conditions are beyond the control of the GSEs but they would affect their performance on the housing goals. A mortgage market dominated by heavy refinancing on the part of middle-income homeowners would reduce the GSEs' ability to reach a specific target on the Low- and Moderate-Income Goal, for example. A jump in interest rates would reduce the availability of very-low-income mortgages for the GSEs to purchase. But on the other hand, the next few years may be favorable to achieving the goals because of the high refinancing activity in 2001, 2002, and 2003. A period of low-to-moderate interest rates would sustain affordability levels without causing the rush to refinance seen earlier in 1998 and 2001–2003. A high percentage of potential refinancers have already done so, and are less likely to do so again. However, these same predictions were made after the 1998 refinance wave, which indicates the uncertainty of making predictions about the mortgage market.

HUD conducted numerous sensitivity analyses of the market shares, several of which were described in Section F.3b above. The starting point of HUD's estimates is the projected $1,700 billion in single-family originations. Increasing the single-family mortgage origination forecast while holding the multifamily origination forecast constant is equivalent to reducing the multifamily mix. Increasing the single-family projection by $200 billion, from $1,700 billion to $1,900 billion, would reduce the market share for the Low- and Moderate-Income Goal by approximately 0.6 percentage point, assuming the other baseline assumptions remain unchanged. A $400 billion increase would reduce the low-mod projected market share by one percentage point. These reductions in the low-mod share of the mortgage market share occur because the multifamily mix is reduced from 15 percent to 13.6 percent to 12.5 percent. As explained in Section E, the absolute volume of single-family originations (such as the $1,700 billion) is not as important as the relative shares of single-family and multifamily rental units.

Recent years have been characterized by record affordability conditions due to low interest rates and economic expansion. Thus, HUD also examined potential changes in the market shares under very different macroeconomic environments, including periods of recession, high interest rates, and heavy refinancing (accompanied by low interest rates). A recessionary environment would likely be characterized by a reduction in single-family activity (or an increase in the multifamily share of the market) and a reduction in the low-mod shares of the single-family-owner market. The low- and moderate-income share of the home purchase market was reduced to 34 percent, or 10.6 percentage points lower than its 1999–2002 average share. Under these rather severe conditions, the overall market share for the Low- and Moderate-Income Goal would decline to 49.0 (49.8) percent, assuming a multifamily mix of 15.0 (16.5) percent. If the low-mod share of the owner market were reduced more modestly to 37 percent, the low-mod share for the overall market would fall to 51.3 percent assuming a multifamily mix of 15.0 percent. (See Table D.11.)

As explained above, several heavy refinance environments were simulated. As a way of examining more extreme refinance environments than 2002, the effects of reducing the multifamily mix for the 2002 refinance environment were examined. The low-mod shares varied with the multifamily mix from 53.8 percent low-mod share with a 10 percent multifamily mix to 52.1 percent with a 6 percent multifamily mix. Under the actual 2002 market assumptions, the low-mod share drops by about one-half percentage point for each one percentage point reduction in the multifamily mix.[49]

[49] This analysis assumes the 2002 refinance rate of 62 percent; if the refinance rate is increased to 65–68 percent (current predictions for 2003), then the overall low-mod market percentages in this sentence would decline by about 0.1 percentage point. If there were a four (five) percentage point difference between the low-mod shares of home purchase and refinance loans, rather than a three percentage point difference as in 2002, then the overall low-mod market percentages in this sentence would decline by about 0.5 (1.0) perecentage point. In addition, due to the uncertainty surrounding estimates of the investor share of the single-family mortgage market (see Section D), the analysis assumes a constant 10 percent share for investors; if the investor share is reduced to 8 percent during a refinance environment, the estimated low-mod share of the market would fall about one percentage point. This figure is obtained by multiplying the low-mod percentage differential between owner and investor mortgages (about 47 percent) by the resulting decimal point increase in the share of owner units (.021 as shown in Table D.7).

Affordability Conditions and Market Estimates. As discussed in Appendix A, record low interest rates, a more diverse socioeconomic group of households seeking homeownership, and affordability initiatives of the private sector have encouraged first-time buyers and low-income borrowers to enter the market since the mid-1990s. A significant increase in interest rates over recent levels would reduce the presence of low-income families in the mortgage market and the availability of low-income mortgages for purchase by the GSEs. As discussed above, the 52–58 percent range for the low-mod market share covers economic and market affordability conditions much less favorable than recent conditions of low interest rates and economic expansion. The low-mod share of the single-family home purchase market could fall to 38 percent, which is 5.2 percentage points lower than its 1995–2002 average level of 43.2 percent, before the baseline market share for the Low- and Moderate-Income Goal would below 52 percent.

Feasibility Determination. As stated in the 2000 Rule, HUD is well aware of the volatility of mortgage markets and the possible impacts on the GSEs' ability to meet the housing goals. FHEFSSA allows for changing market conditions.[50] If HUD has set a goal for a given year and market conditions change dramatically during or prior to the year, making it infeasible for the GSE to attain the goal, HUD must determine ''whether (taking into consideration market and economic conditions and the financial condition of the enterprise) the achievement of the housing goal was or is feasible.'' This provision of FHEFSSA clearly allows for a finding by HUD that a goal was not feasible due to market conditions, and no subsequent actions would be taken. As HUD noted in both the 1995 and 2000 GSE Rules, it does not set the housing goals so that they can be met even under the worst of circumstances. Rather, as explained above, HUD has conducted numerous sensitivity analyses for economic and market affordability environments much more adverse than has existed in recent years. If macroeconomic conditions change even more dramatically, the levels of the goals can be revised to reflect the changed conditions. FHEFSSA and HUD recognize that conditions could change in ways that require revised expectations.

d. New 2000 Census Data and New OMB Metropolitan Area Definitions

Going forward, HUD will be re-benchmarking its median incomes for metropolitan areas and non-metropolitan counties based on 2000 Census median incomes, and will be incorporating the effects of the new OMB metropolitan area definitions. HUD projected the effects of these two changes on the low- and moderate-income shares of the single-family-owner market for the years 1999–2002. Under the historical data, the average low-mod share of the conventional conforming market was 44.6 percent for home purchase loans (unweighted average of 1999–2002 percentages in Table D.8); the corresponding average with the projected data was 43.4 percent, yielding a differential of 1.2 percentage points. For home purchase loans in the conventional conforming market, the projected low-mod percentages for each year between 1999 and 2002 were as follows (with the historical data from Table D.8 in parentheses): 44.4 (45.2) percent for 1999; 44.2 (44.8) percent for 2000; 41.8 (43.2) percent for 2001; and 43.3 (45.3) percent for 2002. The differentials between the projected and historical data are larger in 2001 (1.4 percentage points) and 2002 (2.0 percentage points) than in 1999 (0.8 percentage point) and 2000 (0.6 percentage point). For total (both home purchase and refinance) loans, the average low-mod share of the conventional conforming market based on historical data was 44.8 percent (unweighted average of 1999–2002 percentages in Table D.8); the corresponding average with the projected data was 43.6 percent, again yielding a differential of 1.2 percentage points, with the same pattern exhibited for the annual differentials.[51] It appears that the low-mod share for single-family-owners in the conventional conforming market will be at least one percentage point less due to the re-benchmarking of area median incomes and the new OMB definitions of metropolitan areas.

For the other two property types (single-family rental and multifamily), comparisons between projected and historical low-mod percentages were made using the GSEs' data. For single-family rental mortgages, the unweighted average of Fannie Mae's (Freddie Mac's) low-mod percentage for the years 1999 to 2002 was 87.8 (88.1) percent using the projected data, compared with 87.7 (88.1) percent using the historical data. For multifamily mortgages, the unweighted average of Fannie Mae's (Freddie Mac's) low-mod percentage for the years 1999 to 2002 was 92.1 (90.3) percent using the projected data, compared with 92.9 (92.6) percent using the historical data. These comparisons suggest little difference between the projected and historical low-mod shares for rental properties. HUD also projected the overall low-mod goal percentage for each GSE. For the overall low-mod goal (considering all three property types), the unweighted average of Fannie Mae's (Freddie Mac's) low-mod percentage for the years 1999 to 2002 was 48.5 (47.1) percent using the projected data, compared with 49.1 (47.9) percent using the historical data. Compared with the historical data, the projected data reduces Fannie Mae's average low-mod percentage by 0.6 percentage points, and Freddie Mac's by 0.8 percentage point.

Based on the above analysis, it appears the low-mod share of the conventional conforming market is about one percentage point less when based on projected data, as compared with historical data. Thus, it seems appropriate to drop the 52–58 percent market range to 51–57 percent.

e. Conclusions About the Size of Low- and Moderate-Income Market

Based on the above findings as well as numerous sensitivity analyses, HUD concludes that 51–57 percent is a reasonable range of estimates of the mortgage market's low- and moderate-income share for the year 2005 and beyond. This range covers much more adverse economic and market affordability conditions than have existed recently, allows for different assumptions about the multifamily market, and excludes the effects of B&C loans. HUD recognizes that shifts in economic conditions and refinancing could increase or decrease the size of the low- and moderate-income market during that period.

G. Size of the Conventional Conforming Market Serving Central Cities, Rural Areas, and Other Underserved Areas

The following discussion presents estimates of the size of the conventional conforming market for the Central City, Rural Areas, and other Underserved Areas Goal; this housing goal will also be referred to as the Underserved Areas Goal. The first three sections, which analyze historical data going back to the early 1990's, necessarily used 1990 Census geography to define underserved census tracts and underserved counties. The first two sections focus on underserved census tracts in metropolitan areas, as Section 1 presents underserved area percentages for different property types while Section 2 presents market estimates for metropolitan areas. Section 3 discusses B&C loans and rural areas. But as explained in Appendix B, HUD will be defining underserved areas based on 2000 Census geography beginning in 2005, the first year covered by this proposed rule. Therefore, Section 4 repeats much of the analyses in Sections 1–3 but in terms of 2000 Census geography, rather than 1990 Census geography.

1. Underserved Areas Goal Shares by Property Type

For purposes of the Underserved Areas Goal, underserved areas in metropolitan areas are defined as census tracts with:

(a) Tract median income at or below 90 percent of the MSA median income; or

(b) A minority composition equal to 30 percent or more and a tract median income no more than 120 percent of MSA median income.

Owner Mortgages. The first set of numbers in Table D.12 are the percentages of single-family-owner mortgages that financed properties located in underserved census tracts of metropolitan areas between 1992 and 2002. There are several interesting patterns in these data. During 1999 and 2000, 28–30 percent of mortgages (both home purchase and refinance loans) financed properties located in these areas; this percentage fell to 25.7 percent in 2001 and 25.2 percent in 2002, figures that were slightly below the average (26.8 percent) between 1994 and 1998. In 1992 and 1993,

[50] Section 1336(b)(3)(A).

[51] Between 1999 and 2002, the average single-family-owner differential between the historical and projected low-mod percentages was 1.1 percentage point for Fannie Mae and 1.3 percentage point for Freddie Mac.

the underserved areas share of single-family-owner mortgages was only 20 percent.

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Table D.12

Underserved Area Share of Mortgage Market In Metropolitan Areas: 1992-2002 HMDA Data

	Purchase		Refinance		Total	
Single-Family-Owner	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans
1992	22.2 %	22.2 %	20.1 %	20.0 %	20.8 %	20.7 %
1993	21.9	21.9	19.5	19.4	20.2	20.1
1994	24.4	24.3	27.5	26.9	25.8	25.5
1995	25.5	25.4	29.3	28.3	26.9	26.4
1996	25.0	24.9	28.7	27.4	26.7	26.0
1997	25.2	24.9	30.8	28.9	27.8	26.7
1998	24.6	24.2	24.9	23.4	24.8	23.7
1999	25.8	25.2	30.4	28.5	28.2	26.9
2000	27.1	26.4	35.2	33.2	30.3	28.9
2001	25.8	25.2	25.6	24.7	25.7	24.9
2002	27.2	26.4	24.4	23.5	25.2	24.3
Non-Owner						
1992					42.4	
1993	39.3		41.1		40.4	
1994	39.6		46.7		43.0	
1995	40.1		50.1		43.7	
1996	39.7		48.8		43.5	
1997	40.5		51.2		45.0	
1998	40.3		46.5		43.6	
1999	41.6		51.2		46.1	
2000	42.6		56.8		47.4	
2001	41.3		46.8		44.2	
2002	42.1		45.8		44.2	
Multifamily[1]						
1992					50.2	
1993					47.1	
1994					51.0	
1995					47.8	
1996					48.5	
1997					48.0	
1998					47.0	
1999					49.7	
2000					51.6	
2001					52.7	
2002					55.0	

Source: HMDA data for metropolitan areas. See text for definition of underserved areas and for the method for excluding B&C loans from the market.

[1] A purchase/refinance breakdown is not available for multifamily.

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In most years, refinance loans are more likely than home purchase loans to finance properties located in underserved census tracts. Between 1994 and 2002, 28.5 percent of refinance loans were for properties in underserved areas, compared to 25.6 percent of home purchase loans. This refinance-home-purchase differential is mostly due to the influence of subprime loans. Excluding B&C (all subprime) loans and considering the same time period, 27.2 (25.6) percent of refinance loans were for properties in underserved areas, compared to 25.2 (24.8) percent of home purchase loans. In the year (2000) with the largest differential, excluding B&C (all subprime) loans reduced the refinance-home-purchase differential from 8.1 percent to 6.8 (4.9) percent; in this case, a significant differential remained after excluding B&C (subprime) loans. In the heavy refinance years of 1998, 2001, and 2002, underserved areas accounted for 25–27 percent of both home purchase and refinance loans.

The underserved areas share for home purchase loans has been in the 25–26 range since 1995, except for 2000 and 2002 when it increased to slightly over 27 percent. Considering all (both home purchase and refinance) loans during recent ''home purchase'' environments, the underserved areas share was a high 28–30 percent during 1999–2000, compared with a 27.1 percent average between 1995 and 1997; excluding B&C and other (*i.e.,* A-minus) subprime loans places 1999 on par with the earlier years, with only the year 2000 showing a higher level of underserved area lending than occurred during 1995–97. These data indicate that the single-family-owner market in underserved areas has remained strong since the 2000 Rule was written. While it is recognized that economic and housing affordability conditions could change and reduce the size of the underserved areas market, it appears that the underserved market has certainly maintained itself at a high level over the past four years.

Renter Mortgages. The second and third sets of numbers in Table D.12 are the underserved area percentages for single-family rental mortgages and multifamily mortgages, respectively. Based on HMDA data for single-family, non-owner-occupied (investor) loans, the underserved area share of newly-mortgaged single-family rental units has been in the almost 45 percent range over the past nine years. HMDA data also show that about half of newly-mortgaged multifamily rental units are located in underserved areas.

2. Market Estimates for Underserved Areas in Metropolitan Areas

In the 2000 GSE Rule, HUD estimated that the market share for underserved areas would be between 29 and 32 percent. This estimate turned out to be below market experience, as underserved areas accounted for approximately 32–35 percent of all mortgages originated in metropolitan areas between 1999 and 2002 (see Table D.9). One reason for the underestimation of 1999–2002 experience was that the underserved areas share of the single-family-owner market continued to increase during this period of low interest rates. Table D.13 reports HUD's new estimates of the market share for underserved areas based on the projection model discussed earlier.[52] The estimates in Table D.13 exclude the effects of B&C loans.

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[52] Table D.13 presents estimates for the same combinations of projections used to analyze the Low- and Moderate-Income Goal. Table D.10 in Section F.3 defines Cases 1, 2, and 3; Case 1 (the baseline) projects a 42.5 percent share for single-family rentals and a 48 percent share for multifamily properties while the more conservative Case 2 projects 40 percent and 46 percent, respectively.

Table D.13

Underserved Area Market Estimates
Sensitivity Analysis

Case 1 with Different Underserved Areas Percentages for Single-Family Owner-Occupied's:		Multifamily Mix (Percent) 13.5%	15%	16.5%
Single-Family Owner: [a]	30%	34.7 %	35.0 %	35.2 %
	29%	33.9	34.2	34.5
	28%	33.1	33.4	33.7
	27%	32.4	32.7	33.0
	26%	31.6	31.9	32.2
	25%	30.8	31.1	31.5
	24%	30.0	30.4	30.7
	23%	29.2	29.6	30.0
	22%	28.4	28.8	29.2
	21%	27.7	28.1	28.5
	20%	26.9	27.3	27.7
	19%	26.1	26.5	27.0
	18%	25.3	25.8	26.2
Single-Family Owner:	25% with:			
	Case 1 (above)	30.8 %	31.1 %	31.5 %
	Case 2	30.2	30.5	30.8
	Case 3	31.3	31.6	32.0
Single-Family Owner:	22% with:			
	Case 1 (above)	28.4 %	28.8 %	29.2 %
	Case 2	27.8	28.2	28.5
	Case 3	29.0	29.3	29.7

See text for definitions of underserved areas and for the interpretation of single-family-owner percentages. The underserved area data are based on 1990 geography.

[a] These percentages are assumed to be the overall (both home purchase and refinance) percentages of single-family owner mortgages in underserved census tracts.

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The percentage of single-family-owner mortgages financing properties in underserved areas is the most important determinant of the overall market share for this goal. Therefore, Table D.13 reports market shares for different single-family-owner percentages ranging from 30 percent (2000 level) to 20 percent (1993 level) to 18 percent. If the single-family-owner percentage for underserved areas is at its 1994–2002 HMDA average of 27 percent, the market share estimate is 32–33 percent. The overall market share for underserved areas peaks at 35 percent when the single-family-owner percentage is at its 2000 level of 30 percent. Most of the estimated market shares for the owner percentages that are slightly below recent experience are in the 30 percent range.

Unlike the Low- and Moderate-Income Goal, the market estimates differ only slightly as one moves from Case 1 to Case 3 and from a 13.5 percent mix to 16.5 percent mix. For example, reducing the assumed multifamily mix from 16.5 percent to 13.5 percent reduces the overall market projection for underserved areas by only about 0.6 percentage points. This is because the underserved area differentials between owner and rental properties are not as large as the low- and moderate-income differentials reported earlier.

Additional sensitivity analyses were conducted to reflect the volatility of the economy and mortgage market. Recession and high interest rate scenarios assumed a significant drop in the underserved area percentage for single-family-owner mortgages. The single-family-owner percentage can go as low as 24 percent—which is 3 percentage points lower than the 1994–2002 average of 27 percent—and the estimated market share for underserved areas remains over 30 percent. In a more severe case, the overall underserved market share would be 28 percent if the single-family-owner share fell to 21 percent (its 1992 level), which is 8–9 percentage points lower than its 1999–2000 levels. The heavy refinance scenarios discussed for the low-mod market were also projected for the underserved areas market. With a 65 percent refinance rate and an assumed 24 percent underserved area percentage for owner mortgages, the projection model produced overall market estimates that ranged from 32.6 percent (multifamily mix of 13.5 percent) to 31.7 percent (multifamily mix of 9 percent). Lowering the multifamily mix in the heavy refinance model characterized by year 2002 assumptions produced the following range of estimates for the overall underserved areas market: 32.1 percent (multifamily mix of 11.0 percent) to 31.2 percent (multifamily mix of 8 percent) to 30.7 percent (multifamily mix of 6 percent).[53] In the refinance scenarios, the underserved areas market share was typically at or slightly above 30 percent, which is similar to its market share during 1998 (31.0 percent) but somewhat less than its market share during 2001 (32.6 percent) and 2002 (32.0 percent).

3. Adjustments: B&C Loans, the Rural Underserved Areas Market, and Manufactured Housing Loans

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.b for the Low- and Moderate-Income Goal. The underserved area percentage for B&C loans is 44.5 percent, which is much higher than the projected percentage for the overall market (which peaks at 35 percent as indicated in Table D.13). Thus, dropping B&C loans will reduce the overall market estimates. Consider the case of a single-family-owner percentage of 27 percent, which yields an overall market estimate for underserved areas of 33.4 percent, including B&C loans. When B&C loans are excluded from the projection model, the underserved areas market share falls by 0.7 percentage points to 32.7 percent, which is the figure reported in Table D.13.

Non-metropolitan Areas. Underserved rural areas are non-metropolitan counties with:

(a) County median income at or below 95 percent of the greater of statewide non-metropolitan median income or nationwide non-metropolitan income; or

(b) A minority composition equal to 30 percent or more and a county median income no more that 120 percent of statewide non-metropolitan median income.

HMDA's limited coverage of mortgage data in non-metropolitan counties makes it impossible to estimate the size of the mortgage market in rural areas. However, all indicators suggest that underserved counties in non-metropolitan areas comprise a larger share of the non-metropolitan mortgage market than the underserved census tracts in metropolitan areas comprise of the metropolitan mortgage market. For instance, underserved counties within rural areas include 54 percent of non-metropolitan homeowners; on the other hand, underserved census tracts in metropolitan areas account for only 34 percent of metropolitan homeowners.

During 1999–2001, 36–39 percent of the GSEs' total purchases in non-metropolitan areas were in underserved counties while 25–30 percent of their purchases in metropolitan areas were in underserved census tracts. These figures suggest the market share for underserved counties in rural areas is higher than the market share for underserved census tracts in metropolitan areas. Thus, using a metropolitan estimate to proxy the overall market for this goal, including rural areas, is conservative. Between 1999 and 2001, the non-metropolitan portion of the Underserved Areas Goal has contributed 1.1 to 1.4 (0.7 to 1.3) percentage points to Freddie Mac's (Fannie Mae's) performance, compared with a goals-counting system that only included metropolitan areas.

The limited HMDA data available for non-metropolitan counties also suggest that the underserved areas market estimate would be higher if complete data for non-metropolitan counties were available. According to HMDA, underserved counties accounted for 41–45 percent (or 42.7 percent) of all mortgages originated in non-metropolitan areas between 1999 and 2002. By contrast, underserved census tracts accounted for approximately 24–33 percent (or 27.4 percent) of all mortgages originated in metropolitan areas between 1999 and 2002.[54] Assuming that non-metropolitan areas account for 13 percent of all single-family-owner mortgages and estimating that the single-family-owner market for accounts for 72 percent of newly-mortgaged dwelling units, then the non-metropolitan underserved area differential of approximately 15 percent would raise the overall market estimate by 1.4 percentage point—15 percentage points *times* 0.13 (non-metropolitan area mortgage market share) *times* 0.72 (single-family owner mortgage market share). Based on this calculation, if the 15 point differential reflected actual market conditions, then the underserved areas market share estimated using metropolitan area data should be increased by 1.4 percentage points to account for the effects of underserved counties in non-metropolitan areas.[55] A more conservative adjustment of 1.25 percentage points was made in Table D.13 for the projection model.[56]

Manufactured Housing Loans. Excluding manufactured housing loans (as well as small loans less than $15,000) reduces the overall underserved area market estimates reported in Table D.13 by less than one percentage point. This is estimated as follows. First, excluding these loans reduces the unadjusted underserved areas percentage for single-family-owner mortgages in metropolitan areas by about 1.2 percentage points, based on analysis of recent home purchase environments (1995–97 and 1999 and 2000). Multiplying this 1.2 percentage point differential by the property share of single-family-owner units (72.2 percent) yields 0.8 percentage points, which serves as a proxy for the reduction in the overall underserved area market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping

[53] During 2002, the underserved areas share was 27.2 percent for home purchase loans and 24.4 percent for refinance loans, yielding a differential of 2.8 percentage points. Increasing the differential to 4 percentage points (by reducing the underserved area share of refinance loans to 23.2 percent) would reduce the overall underserved areas market percentages reported in the text by about 0.6 percentage point.

[54] These data do not include loans originated by lenders that specialize in manufactured housing loans, as well as estimated B&C loans. The averages in this and the preceding sentence are annual unweighted averages.

[55] Mortgage Interest Rate Survey (MIRS) data reported by the Federal Housing Finance Board separate conventional home purchase loans by their metropolitan and non-metropolitan location. The average non-metropolitan share between 1999 and 2002 was about 13 percent.

[56] For the 1999–2002 data in Table D.9, the non-metropolitan adjustment was calculated by multiplying the actual single-family-owner property share during a particular year *by* that year's underserved area share for non-metropolitan areas *by* the average metropolitan/non-metropolitan differential of 15 percent (see text). The average differential of 15 percent was used because the annual differentials exhibited rather wide variation, and given issues about HMDA's coverage of non-metropolitan areas, the average differential was used. An adjustment of 1.5 percentage points was used for the earlier years, 1995 to 1998.

manufactured home loans will increase the share of rental units, which increases the overall underserved areas market share, thus partially offsetting the 0.8 percent reduction. The net effect is probably a reduction of about three-quarters of a percentage point.

The estimates presented in Table D.13 suggest that 30–35 percent would be a reasonable range for the market estimate for underserved areas based on the projection model described earlier and assuming 1990 Census geography. This range incorporates market affordability conditions that are more adverse than have existed recently and it excludes B&C loans from the market estimates. As discussed next, switching from 1990 to 2000 Census geography increases this market range by five percentage points to 35–40 percent.

4. 2000-Based Underserved Area Market Shares

The above analysis has concluded that 30–35 percent would be a reasonable market range for the Geographically Targeted Goal based on past origination activity in underserved areas and on scenarios that cover a variety of economic and mortgage market conditions. That analysis, which included historical data going back to the early 1990s, necessarily used 1990 Census geography to define underserved census tracts. As explained in Appendix B, HUD will be defining underserved areas based on 2000 Census geography beginning in 2005, the first year covered by this proposed rule. Appendix B also explains that the number of census tracts in metropolitan areas covered by HUD's underserved area definition will increase from 21,587 tracts (based on 1990 Census) to 26,959 tracts (based on 2000 Census and OMB's respecification of metropolitan areas). This increase in the number of tracts defined as underserved means that the market estimate for the Geographically Targeted Goal will be higher than the 30–35 percent estimate presented above. Thus, this section provides a new range of market estimates for underserved areas defined in terms of 2000 Census data. The 1990-based analysis that produced the 30–35 percent range serves as the starting point for an upward adjustment in the market range.

For the years 1999 to 2002, Table D.14 reports the underserved areas share of the mortgage market for single-family-owner, investor (non-owner), and multifamily properties, with comparisons between 1990-based and 2000-based measures of underserved areas. HMDA data, which is the source of the mortgage data, were reported in terms of 1990 census tracts. For the years 1999 to 2002, HUD used various apportionment techniques to re-allocate 1990-based HMDA mortgage data into census tracts as defined by the 2000 Census. The 1990-based underserved area market shares reported in Table D.14 are the same data reported earlier in Table D.12, while the 2000-based underserved area market shares result from re-allocating 1999–2002 HMDA data into 2000 Census geography. In addition, the data are defined in terms of the new OMB metropolitan area definitions.

Table D.14

Underserved Area Share of Mortgage Market in Metropolitan Areas:
1999-2002 HMDA Data
1990 Geography Versus 2000 Geography

	Purchase						Refinance						Total					
	Conforming Market			Market W/O B&C Loans			Conforming Market			Market W/O B&C Loans			Conforming Market			Market W/O B&C Loans		
Single-Family -Owner	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference	2000-Based	1990-Based	Difference
1999	31.4	25.8	5.6	30.7	25.2	5.5	36.0	30.4	5.6	34.0	28.5	5.5	33.8	28.2	5.6	32.4	26.9	5.5
2000	33.0	27.1	5.9	32.2	26.4	5.8	40.9	35.2	5.7	38.8	33.2	5.6	36.1	30.3	5.8	34.6	28.9	5.7
2001	31.6	25.8	5.8	30.9	25.2	5.7	31.0	25.6	5.4	30.0	24.7	5.3	31.2	25.7	5.5	30.3	24.9	5.4
2002	33.3	27.2	6.1	32.3	26.4	5.9	29.8	24.4	5.4	28.7	23.5	5.2	30.8	25.2	5.6	29.8	24.3	5.5
1999-2002	32.3	26.5	5.8	31.5	25.8	5.7	32.3	26.8	5.5	30.9	25.6	5.3	32.3	26.7	5.6	31.1	25.7	5.4
Non-Owner																		
1999	46.7	41.6	5.1				56.4	51.2	5.2				51.2	46.1	5.1			
2000	48.0	42.6	5.4				61.4	56.8	4.6				52.5	47.4	5.1			
2001	47.1	41.3	5.8				52.0	46.8	5.2				49.7	44.2	5.5			
2002	48.1	42.1	6.0				51.2	45.8	5.4				49.8	44.2	5.6			
1999-2002	47.5						53.6						50.5					
Multifamily[1]																		
1999													57.8	49.7	8.1			
2000													58.8	51.6	7.2			
2001													60.7	52.7	8.0			
2002													61.8	55.0	6.8			
1999-2002													60.0					

Source: HMDA data for metropolitan aeas. See text for definition of underserved areas and for the method for excluding B&C loans from the market. The 1999-2002 averages are loan-based weighted averages.
The "1990-Based" underserved area shares are based on 1990 census tracts while the "2000-Based" underserved area shares are based on 2000 census tracts, and new OMB metropolitan area definitions.

[1] A purchase/refinance breakdown is not available for multifamily.

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First, consider the market shares for single-family-owner properties in the top portion of Table D.14. In 2002, the underserved area percentage for home purchase loans increases from 27.2 percent (1990-based) to 33.3 percent (2000-based), an increase of 6.1 percentage points; the corresponding percentages for refinance loans were 24.4 percent (1990-based) and 29.8 percent (2000-based), or an increase of 5.4 percentage points. Considering total owner loans (*i.e.*, both home purchase and refinance owner loans), the average of the ''Differences'' reported in Table D.14 is 5.6 percentage points for the conforming market. Between 1999 and 2001, 32.3 percent of mortgage originations were originated in underserved areas based on 2000 geography, compared with 26.7 percent based on 1990 geography—yielding an overall differential of 5.6 percentage points.

Next, consider the underserved area market shares reported for single-family rental (or non-owner) and multifamily properties in the middle and bottom portions of Table D.14. In 2002, the underserved area percentage for home purchase non-owner loans increases from 42.1 percent (1990-based) to 48.1 percent (2000-based), an increase of 6.0 percentage points; the corresponding percentages for refinance loans were 45.8 percent (1990-based) and 51.2 percent (2000-based), or an increase of 5.4 percentage points. Considering total single-family rental loans (*i.e.*, home purchase and refinance loans), the 1999–02 average of the ''Differences'' reported in Table D.14 is 5.3 percentage points for the single-family rental market. The multifamily differentials are slightly higher at approximately 7–8 percentage points. Between 1999 and 2002, 59.8 percent of multifamily originations (on a dollar basis) were originated in underserved areas based on 2000 geography, compared with 52.3 percent based on 1990 geography.

The underserved areas shares based on 2000 Census geography were estimated for the last four years, 1999 to 2002; the following estimates were obtained: 39.0 percent (1999), 40.4 percent (2000), 37.7 percent (2001), and 37.2 percent (2002). These 2000-based market estimates are slightly over five percentage points higher than the 1990-based market estimates for underserved areas reported in Table D.9: 5.1 percent (1999), 5.2 percent (2000), 5.1 percent (2001), 5.1 percent (2002), and 5.1 percent (2002).[57] This analysis suggests that a reasonable range for the overall market share for underserved areas based on 2000 geography might be 35–40 percent, which is obtained by simply adding five percentage points to the 30–35 percent range estimated earlier based on 1990-based geography. As discussed next, a 35–40 percent range is indeed an appropriate estimate of the underserved area market based on 2000 geography.

Table D.15 reports the results of the projection model assuming 2000 geography. Since Table D.15 has the same interpretation as Table D.13, there is no need to provide a detailed discussion of it.[58] If the single-family-owner percentage for underserved areas is at its 1999–2002 HMDA average of 33 percent, the market share estimate is 39 percent. The overall market share for underserved areas peaks at approximately 41 percent when the single-family-owner percentage is at its 2000 level of 36 percent. Most of the estimated market shares for the owner percentages that are within four percentage points of recent experience (*i.e.*, the 29–33 percent range) are in the 36–39 percent range.

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[57] The differentials reported in Table D.14 for the three individual property types tend to be greater than 5.5 percentage points, which raises the question of why the overall differential is only 5.1 percentage points. As explained later, the upward adjustment to account for underserved areas in non-metropolitan areas is about 0.65 percentage point less using the 2000-based Census data than it was using the 1990-based Census data.

[58] In addition to adjusting the various single-family-owner parameters upward, the following 2000-based assumptions were made with respect to the underserved areas shares of single-family rental properties: 52.0% for Case 1, 50.0% for Case 2, and 54.0% for Case 3. If these percentages were based only on the HMDA data reported in Table D.14, they would have been 48.0% for Case 1, 46.0% for Case 2, and 50.0% for Case 3. However, in conducting this 2000-based analysis, HUD also computed the single-family rental shares for the GSEs in terms of both the number of mortgages (consistent with the HMDA data in Table D.14) and the number of single-family rental units financed (the concept used in the housing goals calculation). That analysis showed that the unit-based underserved area percentage was approximately six percentage points higher than the number-of-mortgage-based underserved area percentage. To reflect this differential, HUD adjusted the percentages in Cases 1–3 by an additional four percentage points. With respect to multifamily properties, the following assumptions were made with respect to underserved areas shares: 58.0% for Case 1, 56.0% for Case 2, and 59.0% for Case 3. If these percentages were based only on the HMDA data reported in Table D.14, they would have been 55.0% for Case 1, 53.0% for Case 2, and 55.0% for Case 3. HUD computed the multifamily underserved area shares for the GSEs in terms of mortgage dollars (consistent with the HMDA data Table D.14) and the number of multifamily rental units financed (the concept used in the housing goals calculation). That analysis showed that the unit-based underserved area percentage was also approximately six percentage points higher than the mortgage-dollar-based underserved area percentage; thus HUD adjusted the percentages upward.

Table D.15

Underserved Area Market Estimates For Sensitivity Analysis 2000 Census Geography

Case 1 with Different Underserved Areas Percentages for Single-Family Owner-Occupied's:		Multifamily Mix (Percent)		
		13.5%	15%	16.5%
Single-Family Owner-Occupied: [a]	36%	41.1 %	41.4 %	41.7 %
	35%	40.3	40.6	41.0
	34%	39.5	39.9	40.2
	33%	38.7	39.1	39.5
	32%	37.9	38.3	38.7
	31%	37.2	37.6	37.9
	30%	36.4	36.8	37.2
	29%	35.6	36.0	36.4
	28%	34.8	35.3	35.7
	27%	34.0	34.0	34.9
	26%	33.2	33.7	34.2
Single-Family Owner-Occupied:	31% with:			
	Case 1 (above)	37.2 %	37.6 %	37.9 %
	Case 2	36.2	36.5	36.9
	Case 3	38.3	38.7	39.1
Single-Family Owner-Occupied:	28% with:			
	Case 1 (above)	34.8 %	35.3 %	35.7 %
	Case 2	33.7	34.1	34.6
	Case 3	36.0	36.5	36.9

[a] These percentages are assumed to be the overall (both home purchase and refinance) percentages of single-family owner mortgages in underserved census tracts.

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Following the 1990-based analysis in Section G.2, additional sensitivity analyses were conducted to reflect the volatility of the economy and mortgage market. Recession and high interest rate scenarios assumed a significant drop in the underserved area percentage for single-family-owner mortgages. The single-family-owner percentage can go as low as 29 percent—which is 3 percentage points lower than the 1994–2002 average of 32 percent and 4 percentage points lower than the 1999–2002 average of 33 percent—and the estimated market share for underserved areas remains about 36 percent. In a more severe case, the overall underserved market share would be 33–34 percent if the single-family-owner share fell to 26 percent (its 1992 level), which is 7 percentage points lower than its 1999–2002 average. In the heavy refinance scenarios (with their lower multifamily mixes), the underserved areas market share was typically around 36–37 percent.

Non-metropolitan Areas. As explained in Section G.3, in order to account for the much larger coverage of underserved areas in non-metropolitan areas, 1.25 percent was added to the market share based on metropolitan area data, in order to arrive at a nationwide estimate of the market share for underserved areas. According to HMDA, underserved counties accounted for 42.7 percent of single-family-owner mortgages originated in non-metropolitan areas during the 1999-to-2002 period, based on 1990 geography. With 2000 geography and the new tract-based definition of underserved areas in non-metropolitan areas, the market share falls by 2.3 percentage points to 39.6 percent. This 2000-based underserved areas percentage of 39.6 percent for non-metropolitan areas is about eight percentage points less than the comparable percentage for metropolitan areas.[59] This eight-point differential is lower than the 15-point differential used in the earlier 1990-based Census analysis. Assuming that non-metropolitan areas account for 13 percent of all single-family-owner mortgages and estimating that the single-family-owner market accounts for 72 percent of newly-mortgaged dwelling units, then the non-metropolitan underserved area differential of 8 percent would raise the overall market estimate by 0.75 percentage point—8 percentage points *times* 0.13 (non-metropolitan area mortgage market share) *times* 0.72 (single-family owner mortgage market share). Based on this calculation, if the 8 point differential reflected actual market conditions, then the underserved areas market share estimated using metropolitan area data should be increased by 0.75 percentage point to account for the effects of underserved counties in non-metropolitan areas, based on 2000 geography. A more conservative adjustment of 0.65 percentage points was made in Table D.15, which reports the results of the projection model.

Section G.3 reported that excluding manufactured housing loans (as well as small loans less than $15,000) reduced the overall underserved area market estimates based on 1990 geography by less than one percentage point. Excluding manufactured housing loans leads to a similar reduction for the market estimates based on 2000 geography.

The estimates presented in Table D.15 suggest that 35–40 percent is a reasonable range for the market estimate for underserved areas based on the projection model described earlier. This range incorporates market affordability conditions that are more adverse than have existed recently and it excludes B&C loans from the market estimates.

5. Conclusions

Based on the above findings as well as numerous sensitivity analyses, HUD concludes that 35–40 percent is a reasonable estimate of mortgage market originations that would qualify toward achievement of the Geographically Targeted Goal if purchased by a GSE. The 35–40 percent range is higher than the market range in the 2000 Rule mainly because it is based on 2000 Census geography which includes more underserved census tracts than 1990 Census geography. HUD recognizes that shifts in economic and housing market conditions could affect the size of this market; however, the market estimate allows for the possibility that adverse economic conditions can make housing less affordable than it has been in the last few years. In addition, the market estimate incorporates a range of assumptions about the size of the multifamily market and excludes B&C loans.

H. Size of the Conventional Conforming Market for the Special Affordable Housing Goal

This section presents estimates of the conventional conforming mortgage market for the Special Affordable Housing Goal. The special affordable market consists of owner and rental dwelling units which are occupied by, or affordable to: (a) Very-low-income families; *or* (b) low-income families in low-income census tracts; *or* (c) low-income families in multifamily projects that meet minimum income thresholds patterned on the low-income housing tax credit (LIHTC).[60] HUD estimates that the special affordable market is 24–28 percent of the conventional conforming market.

HUD is proposing to establish each GSE's special affordable multifamily subgoal as 1.0 percent of its average annual dollar volume of total (single-family and multifamily) mortgage purchases over the 2000–2002 period. In dollar terms, the Department's proposal is $5.49 billion per year in special affordable multifamily purchases for Fannie Mae, and $3.92 billion for Freddie Mac. The multifamily special affordable goal, as well as the special affordable home purchase subgoal, are discussed further in Appendix C.

Section F described HUD's methodology for estimating the size of the low- and moderate-income market. Essentially the same methodology is employed here except that the focus is on the very-low-income market (0–60 percent of Area Median Income) and that portion of the low-income market (60–80 percent of Area Median Income) that is located in low-income census tracts. Data are not available to estimate the number of renters with incomes between 60 and 80 percent of Area Median Income who live in projects that meet the tax credit thresholds. Thus, this part of the Special Affordable Housing Goal is not included in the market estimate.

1. Special Affordable Shares by Property Type

The basic approach involves estimating for each property type the share of dwelling units financed by mortgages that are occupied by very-low-income families or by low-income families living in low-income areas. HUD combined mortgage information from HMDA, the American Housing Survey, and the Property Owners and Managers Survey in order to estimate these special affordable shares.

a. Special Affordable Owner Percentages

HMDA data for the percentage of single-family-owners that qualify for the Special Affordable Goal are reported in Table D.16. That table also reports data for the two components of the Special Affordable Goal—very-low-income borrowers and low-income borrowers living in low-income census tracts. Focusing first on home purchase loans, HMDA data show that the special affordable share of the market has followed a pattern similar to that discussed earlier for the low- and moderate-income loans. The percentage of special affordable borrowers increased significantly between 1992 and 1994, from 10.4 percent of the conforming market to 12.6 percent in 1993, and then to 14.1 percent in 1994. Between 1995 and 1998, the special affordable market was in the 14–16 percent range, averaging 15.1 percent. Over the past four years (1999–2002), the special affordable share of the home purchase loans has averaged 16.7 percent.

[59] Between 1999 and 2002, 2000-based underserved census tracts accounted for 31.4 percent (unweighted annual average) of all mortgages in metropolitan areas. This 1999–02 average percentage for metropolitan areas is lower that the 33.0 percent reported in previous paragraphs. To be comparable with the non-metropolitan data, these metropolitan area data do not include loans originated by lenders that specialize in manufactured housing loans and B&C loans; excluding these loans lowers the underserved areas share.

[60] There are two LIHTC thresholds: at least 20 percent of the units are affordable at 50 percent of AMI or at least 40 percent of the units are affordable at 60 percent of AMI.

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Table D.16

Special Affordable Share of Single-Family-Owner Mortgage Market: 1992-2002 HMDA Data

	Home Purchase		Refinance		Total	
	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans	Conforming Market	Market W/O B&C Loans
1. Very-Low-Income						
1992	8.7 %	8.7 %	4.5 %	4.4 %	5.8 %	5.8 %
1993	10.8	10.8	5.8	5.7	7.3	7.2
1994	11.9	11.9	11.0	10.6	11.5	11.3
1995	12.0	12.0	12.3	11.7	12.1	11.9
1996	12.7	12.7	13.0	12.2	12.8	12.5
1997	13.0	13.0	14.5	13.4	13.7	13.2
1998	13.3	13.2	11.3	10.4	12.1	11.4
1999	15.0	14.7	16.2	14.8	15.6	14.8
2000	14.7	14.4	19.0	17.6	16.3	15.6
2001	13.6	13.5	12.3	11.7	12.7	12.3
2002	14.1	14.0	12.5	12.0	12.9	12.6
2. Low Income in Low Income Areas						
1992	1.7 %	1.7 %	1.1 %	1.1 %	1.3 %	1.3 %
1993	1.8	1.8	1.2	1.2	1.4	1.4
1994	2.2	2.2	2.3	2.2	2.3	2.2
1995	2.4	2.4	2.7	2.5	2.5	2.4
1996	2.3	2.3	2.6	2.4	2.4	2.3
1997	2.3	2.3	3.0	2.7	2.6	2.5
1998	2.2	2.2	2.2	1.9	2.2	2.0
1999	2.3	2.3	3.0	2.7	2.7	2.5
2000	2.5	2.4	3.7	3.3	2.9	2.7
2001	2.2	2.2	2.2	2.1	2.2	2.1
2002	2.3	2.3	2.1	2.0	2.2	2.0
3. Special Affordable (1 plus 2)						
1992	10.4 %	10.4 %	5.5 %	5.5 %	7.1 %	7.1 %
1993	12.6	12.6	7.0	6.9	8.6	8.6
1994	14.1	14.1	13.2	12.8	13.7	13.5
1995	14.4	14.4	14.9	14.2	14.6	14.3
1996	15.0	15.0	15.6	14.6	15.3	14.8
1997	15.3	15.2	17.6	16.1	16.4	15.6
1998	15.5	15.4	13.5	12.3	14.2	13.5
1999	17.3	17.0	19.2	17.5	18.3	17.3
2000	17.1	16.8	22.7	20.9	19.3	18.3
2001	15.8	15.6	14.6	13.8	15.0	14.5
2002	16.4	16.3	14.6	14.0	15.1	14.6

Source: HMDA data in metropolitan areas. See text for the method for excluding B&C loans from the market.

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Considering all (home purchase and refinance) loans during recent ''home purchase'' environments, the special affordable share averaged 18.8 percent during 1999–2000, over three percentage points more than the 15.4 percent average between 1995 and 1997. Excluding B&C (all subprime) loans from the analysis reduces this differential only slightly to 2.7 (2.4) percentage points. As mentioned earlier, lending patterns could change with sharp changes in the economy, but the fact that there have been several years of strong affordable lending suggests that the special affordable market has changed in fundamental ways from the mortgage market of the early 1990s. In fact, there appears to have been a slight increase in this market recently, at least during 1999 and 2000.

Except for the three years of heavy refinancing (1998, 2001, and 2002), the special affordable share of the refinance market has recently been higher than the special affordable share of the home purchase market—a pattern discussed in Section F for low-mod and very-low-income loans. During 1999 (2000), for example, the special affordable share of the refinance market was 19.2 (22.7) percent, compared with 17.3 (17.1) percent for the home loan market. The higher special affordable percentages for refinance loans are reduced or even eliminated if subprime loans are excluded from the analysis. As shown in Table D.16, excluding B&C loans from the data practically eliminates the refinance-home-purchase differential for 1999 and reduces the differential for 2000 to 4.1 percentage points (from 5.6 percentage points). Going further and excluding A-minus loans from the year 2000 data would reduce the differential to 2.1 percentage points. HUD's projection model excludes B&C loans and sensitivity analyses will show the effects on the overall special affordable market of excluding all single-family subprime loans.

b. Very-Low-Income Rental Percentages

Table D.14 in Appendix D of the 2000 Rule reported the percentages of the single-family rental and multifamily stock affordable to very-low-income families. According to the AHS, 59 percent of single-family units and 53 percent of multifamily units were affordable to very-low-income families in 1997. The corresponding average values for the AHS's six surveys between 1985 and 1997 were 58 percent and 47 percent, respectively. As discussed earlier in Section F, an important issue concerns whether rent data based on the existing rental stock from the AHS can be used to proxy rents of newly mortgaged rental units. HUD's analysis of POMS data during the 2000 rule-making process suggested that it could—estimates from POMS of the rent affordability of newly-mortgaged rental properties are quite consistent with the AHS data on the affordability of the rental stock. Fifty-six (56) percent of single-family rental properties with new mortgages between 1993 and 1995 were affordable to very-low-income families, as was 51 percent of newly-mortgaged multifamily properties. These percentages for newly-mortgaged properties from the POMS are similar to those reported above from the AHS for the rental stock. The baseline projection from HUD's market share model assumes that 50 percent of newly-mortgaged, single-family rental units, and 47 percent of multifamily units, are affordable to very-low-income families.

c. Low-Income Renters in Low-Income Areas

HMDA does not provide data on low-income renters living in low-income census tracts. As a substitute, HUD used the POMS and AHS data. As explained in the 2000 GSE Rule, the share of single-family and multifamily rental units affordable to low-income renters at 60–80 percent of area median income (AMI) and located in low-income tracts was calculated using the internal Census Bureau AHS and POMS data files.[61] The POMS data showed that 8.3 percent of the 1995, single-family rental stock, and 9.3 percent of single-family rental units receiving financing between 1993 and 1995, were affordable at the 60–80 percent level and were located in low-income census tracts. The POMS data also showed that 12.4 percent of the 1995 multifamily stock, and 13.5 percent of the multifamily units receiving financing between 1993 and 1995, were affordable at the 60–80 percent level and located in low-income census tracts.[62] The baseline analysis below assumes that 8 percent of the single-family rental units and 11.0 percent of multifamily units are affordable at 60–80 percent of AMI and located in low-income areas.[63]

2. Size of the Special Affordable Market

During the 2000 rule making, HUD estimated a market share for the Special Affordable Goal of 23–26 percent. This estimate was below market experience, as the special affordable market accounted for 26–30 percent of all housing units financed between 1999 and 2002, as well as 26–29 percent of units financed between 1995 and 1998 (see Table D.9). This underestimation was mainly due to the assumption in the projection model that the special affordable share of refinance loans was lower than the special affordable share of home purchase loans; and the fact that the special affordable share of the single-family-owner market increased recently (see above discussion). This section produces new estimates of the special affordable market.

The size of the special affordable market depends in large part on the size of the multifamily market and on the special affordable percentages of both owners and renters. Table D.10 gives new market estimates for different combinations of these factors. As before, Case 2 is slightly more conservative than the baseline projections (Case 1) mentioned above. For instance, Case 2 assumes that only 6 percent of rental units are affordable to low-income renters living in low-income areas.

Table D.17 assumes a refinance rate of 35 percent, which means that the table reflects home purchase or low-refinancing environments. After presenting these results, market estimates reflecting a heavy refinance environment will be presented. In the 2000 GSE Rule, HUD assumed that the special affordable share of refinance loans was 1.4 percentage points lower than the special affordable share of borrowers purchasing a home. However, as discussed earlier, the special affordable share of refinance loans equaled or was greater than the special affordable share of home purchase loans during home purchase environments such as 1995–97 or 1999–2000; thus, the assumption of a lower special affordable shares for refinance loans is initially dropped from the analysis but will be reintroduced during the sensitivity analysis and the discussion of heavy refinancing environments.

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[61] Affordability was calculated as discussed earlier in Section F, using AHS monthly housing cost, monthly rent, number of bedrooms, and MSA location fields. Low-income tracts were identified using the income characteristics of census tracts from the 1990 Census of Population, and the census tract field on the AHS file was used to assign units in the AHS survey to low-income tracts and other tracts. POMS data on year of mortgage origination were utilized to restrict the sample to properties mortgaged during 1993–1995.

[62] During the 1995 rule-making process, HUD examined the rental housing stock located in low-income zones of 41 metropolitan areas surveyed as part of the AHS between 1989 and 1993. While the low-income zones did not exactly coincide with low-income tracts, they were the only proxy readily available to HUD at that time. Slightly over 13 percent of single-family rental units were both affordable at the 60–80 percent of AMI level and located in low-income zones; almost 16 percent of multifamily units fell into this category.

[63] Therefore, combining the assumed very-low-income percentage of 50 percent (47 percent) for single-family rental (multifamily) units with the assumed low-income-in-low-income-area percentage of 8 percent (11 percent) for single-family rental (multifamily) units yields the special affordable percentage of 58 percent (58 percent) for single-family rental (multifamily) units. This is the baseline Case 1 in Table D.10.

Table D.17

Special Affordable Market Estimates
Sensitivity Analysis

	Multifamily Mix (Percent)		
	13.5%	15%	16.5%
Case 1 With:			
(a) Rent Affordable at 60% AMI: Single-Family Rent Percentages= 50%, Multifmaily= 47%			
(b) Low-Income in Low-Income Areas= 8% for Single-Family Rental and 11% for Multifamily			
(c) Single-Family Owner-Occupied's Special Affordable Share: [a]			
19.0%	29.4 %	30.0 %	30.5 %
18.0%	28.7	29.2	29.7
17.0%	27.9	28.4	29.0
16.0%	27.1	27.7	28.2
15.0%	26.3	26.9	27.5
14.0%	25.5	26.1	26.7
13.0%	24.8	25.4	26.0
12.0%	24.0	24.6	25.2
11.0%	23.2	23.8	24.5
10.0%	22.4	23.1	23.7
9.0%	21.6	22.3	23.0
Case 2 With:			
(a) Rent Affordable at 60% AMI: Single-Family Rent Percentages= 47%, Multifamily= 44%			
(b) Low-Income in Low-Income Areas= 6% for Single-Family Rental and 10% for Multifamily			
(c) Single-Family Owner-Occupied's Special Affordable Share:			
16.0%	25.8 %	26.3 %	26.9 %
15.0%	25.0	25.6	26.1
14.0%	24.3	24.8	25.4
13.0%	23.5	24.0	24.6
12.0%	22.7	23.3	23.9
11.0%	21.9	22.5	23.1
10.0%	21.1	21.7	22.4
Case 3 With:			
(a) Rent Affordable at 60% AMI: Single-Family Rent Percentage= 53%, Multifamily= 50%			
(b) Low-Income in Low-Income Areas= 8% for Single-Family Rental and 12% for Multifamily			
(c) Single-Family Owner-Occupied's Special Affordable Share:			
16.0%	28.4 %	29.0 %	29.7 %
15.0%	27.6	28.3	28.9
14.0%	26.9	27.5	28.2
13.0%	26.1	26.8	27.4
12.0%	25.3	26.0	26.7
11.0%	24.6	25.2	25.9
10.0%	23.8	24.5	25.2

[a] See text for interpretation of single-family-owner percentages.

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As shown in Table D.17, the market estimates are: 28–29 percent if the owner percentage is 17 percent (home purchase share for 1999 and 2000); 27–28 percent if the owner percentage is 16 percent (home purchase share for 1998, 2001, and 2002); and 26–27 percent if the owner percentage is 15 percent (home purchase average from 1995–97). If the special affordable percentage for home purchase loans fell to 12 percent '' or by four percentage points below its 1995–2002 average level of 16 percent '' then the overall market estimate would be about 25 percent. Thus, 25 percent is consistent with a rather significant decline in the special affordable share of the single-family home purchase market. A 25 percent market estimate allows for the possibility that adverse economic and housing affordability conditions could keep special affordable families out of the housing market. On the other hand, if the special affordable home purchase percentage stays at its recent levels (15–17 percent), the market estimate is in the 27–29 percent range.

Heavy Refinancing Environments. The special affordable share of the overall market declines when refinances dominate the market. Section F.3b, which presents the low-mod market estimates, explained the assumptions for incorporating a refinance environment into the basic projection model for 2005–08. Briefly, they are: (1) the refinance share of single-family mortgages was increased to 65 percent (from 35 percent); the market share for subprime loans reduced to 8.5 percent (from 12 percent); and the multifamily mix was initially assumed to be 13.5 percent (instead of 15 percent or 16.5 percent, which characterize a home purchase environment). The special affordable share for refinance loans was assumed to be 13 percent, or two percentage points below the assumed special affordable share of home purchase loans (which was set at 15 percent, slightly below the 1998, 2001, and 2002 level of 16 percent). Under these assumptions, the special affordable market share (excluding B&C loans) was projected to be 25.4 percent. If the multifamily mix is reduced further to 11 (9) percent, the market projection falls to 24.4 (23.6) percent. If the single-family special affordable percentages are reduced to 14 percent (home purchase) and 12 percent (refinance), and the multifamily mix is 11 (9) percent, the overall low-mod market share falls 23.6 (22.8) percent. As noted in the discussion of the low-mod market, refinance environments are characterized by low interest rates; therefore, it is unlikely that the special affordable share of the home purchase market would fall below 14 percent during heavy refinance environments, given that it has averaged almost 16 percent over the past seven years. In addition to these projections, a refinance environment characterized by the year 2002 market was used to examine how the special affordable market changed under heavy refinancing conditions. Lowering the multifamily mix in the heavy refinance model characterized by year 2002 assumptions produced the following range of estimates for the overall special affordable market: 25.8 percent (multifamily mix of 11.0 percent) to 24.7 percent (multifamily mix of 8 percent) to 23.9 percent (multifamily mix of 6 percent).[64]

The various market estimates presented in Table D.17 for a home purchase environment and reported above for a refinance environment are not all equally likely. Most of them equal or exceed 25 percent. In the home purchase environment, estimates below 25 percent would require the special affordable share for home purchase loans to drop to 12–13 percent which would be 3–4 percentage points lower than the 1995–2002 average for the special affordable share of the home purchase market. Dropping below 25 percent would be more likely in a heavy refinance environment, as the actual estimated market shares during 1998, 2001, and 2002 were approximately 26 percent. However, sensitivity analyses of a refinance environment showed that a 24 percent special affordable market share was consistent with market assumptions significantly more adverse than the heavy refinance years of 1998, 2001, and 2002.

Additional Sensitivity Analyses. Additional sensitivity analyses were conducted around the results reported in Table D.17, which reflects a home purchase environment. Assuming that the special affordable share of the home loan market is 16 percent, reducing the multifamily mix from its baseline of 15 percent to 13.5 (12) percent would reduce the overall special affordable market share from 27.7 percent to 27.1 (26.4) percent. In this case, increasing the multifamily mix from 15 percent to 16.5 percent would increase the special affordable market share from 27.7 percent to 28.2 percent.

As shown in Table D.17, the market estimates under the more conservative Case 2 projections are one to one-and-a-half percentage points below those under the Case 1 projections. This is due mainly to Case 2's lower share of single-family investor mortgages (8 percent versus 10 percent in Case 1) and its lower affordability and low-income-area percentages for rental housing (*e.g.*, 53 percent for single-family rental units in Case 2 versus 58 percent in Case 1).

Recent years have been characterized by record low interest rates and strong housing affordability conditions. Therefore, it was important for HUD to examine potential changes in the market shares under more adverse market affordability environments than have existed recently, as well as under heavy refinance environments. A heavy refinance environment has already been discussed so this section focuses on recession and high-interest-rate scenarios. In the recession scenario defined earlier in the low-mod analysis (see Section F.3a), the special affordable share of the home purchase market was reduced to 12 (10) percent, or 4 (6) percentage points lower than its 1995–2002 average share of 16 percent. Under these rather severe conditions, the overall market share for the Special Affordable Goal would decline to 25.1 (23.6) percent, assuming a multifamily mix of 16.5 percent. A significant increase in interest rates would also make it more difficult for lower income families to afford homeownership and qualify for mortgages, thus reducing the special affordable share of the market. But as noted above, the special affordable share of the home purchase market could fall to 10 percent '' almost forty percent below its seven-year average of 16 percent '' before the market share for the Special Affordable Goal would fall below 24 percent.

B&C Loans. The procedure for dropping B&C loans from the projections is the same as described in Section F.3.b for the Low- and Moderate-Income Goal. The special affordable percentage for B&C loans is 28.0 percent, which is similar to the projected percentages for the overall market given in Table D.17. Thus, dropping B&C loans (as well as all subprime loans) does not appreciably reduce the overall market estimates. Consider the case of a single-family-owner percentage of 15 percent, which yields an overall market estimate for Special Affordable Goal of 27.0 percent if B&C loans are included in the analysis. Dropping B&C loans from the projection model reduces the special affordable market share by 0.1 percentage points to 26.9, as reported in Table D.15. Dropping all subprime loans (A-minus as well as B&C) would reduce the special affordable market projection to 26.8 percent.

Manufactured Housing Loans. Excluding manufactured housing loans (as well as small loans less than $15,000) reduces the overall market estimates reported in Table D.17 by about one percentage point or less. This is estimated as follows. First, excluding these loans reduces the unadjusted special affordable percentage for single-family-owner mortgages in metropolitan areas by about 1.5 percentage points, based on analysis of recent home purchase environments (1995–97 and 1999 and 2000). Multiplying this 1.5 percentage point differential by the property share of single-family-owner units (72.2 percent) yields 1.1 percentage points, which serves as a proxy for the reduction in the overall special affordable market share due to dropping manufactured home loans from the market analysis. The actual reduction will be somewhat less because dropping manufactured home loans will increase the share of rental units, which increases the overall special affordable market share, thus partially offsetting the 1.1 percent reduction. The net effect is probably a reduction of slightly less than one percentage point.

Tax Credit Definition. Data are not available to measure the increase in market share associated with including low-income units located in multifamily buildings that meet threshold standards for the low-income housing tax credit. Currently, the effect on GSE performance under the Special Affordable Housing Goal is rather small. For instance, adding the tax credit condition increased Fannie Mae's performance as follows: 0.42 percentage point in 1999 (from 17.20 to 17.62 percent); 0.59 percentage point in 2000 (from 18.64 to 19.23 percent); and

[64] During 2002, the special affordable share was 15.8 percent for home purchase loans and 14.6 percent for refinance loans, yielding a differential of 1.2 percentage points. Increasing the differential to 2 percentage points (by reducing the special affordable share of refinance loans to 13.8 percent) would reduce the overall special affordable market percentages reported in the text by about 0.4 percentage point.

0.43 percent point in 2001 (from 19.29 to 19.72 percent). The increases for Freddie Mac have been lower (ranging from 0.24 to 0.38 percentage point during the same period).

New 2000-Based Census Geography and New OMB Metropolitan Area Definitions. Going forward, HUD will be re-benchmarking its median incomes for metropolitan areas and non-metropolitan counties based on 2000 Census incomes, will be defining low-income census tracts (which are included in the definition of special affordable) in terms of the 2000 Census geography, and will be incorporating the effects of the new OMB metropolitan area definitions. HUD projected the effects of these three changes on the special affordable shares of the market for the years 1999–2002. Under the historical data, the average special affordable share of the conventional conforming market was 16.7 (16.9) percent for home purchase (total) loans (see Table D.16); the corresponding average with the projected data was 16.6 (16.9) percent. For home purchase loans in the conventional conforming market, the projected special affordable percentages for each year between 1999 and 2002 were as follows (with the historical data from Table D.16 in parentheses): 17.5 (17.3) percent for 1999; 17.4 (17.1) percent for 2000; 15.6 (15.8) percent for 2001; and 15.8 (16.4) percent for 2002. While the projected percentages are lower in 2001 (0.2 percentage point) and 2002 (0.6 percentage point), they are higher in 1999 (0.2 percentage point) and 2000 (0.3 percentage point). Given these small differences there is no need to changes the market estimates discussed above.[65]

3. Conclusions

Sensitivity analyses were conducted for the market shares of each property type, for the very-low-income shares of each property type, and for various assumptions in the market projection model. These analyses suggest that 24–28 percent is a reasonable estimate of the size of the conventional conforming market for the Special Affordable Housing Goal. This estimate excludes B&C loans and allows for the possibility that homeownership will not remain as affordable as it has over the past five years. In addition, the estimate covers a range of projections about the size of the multifamily market.

[FR Doc. 04–9352 Filed 4–30–04; 8:45 am]

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[65] For the other two property types (single-family rental and multifamily), comparisons between projected and historical special affordable percentages were made using the GSEs' data. For single-family rental mortgages, the unweighted average of Fannie Mae's (Freddie Mac's) special affordable percentage for the years 1999 to 2002 was 50.2 (51.4) percent using the projected data, compared with 48.0 (49.4) percent using the historical data. For multifamily mortgages, the unweighted average of Fannie Mae's (Freddie Mac's) special affordable percentage for the years 1999 to 2002 was 50.4 (45.1) percent using the projected data, compared with 53.6 (49.4) percent using the historical data. These comparisons suggest little difference between the projected and historical special affordable shares for rental properties. HUD also projected the overall special affordable percentage for each GSE. For the overall special affordable goal (considering all three property types), the unweighted average of Fannie Mae's (Freddie Mac's) special affordable percentage for the years 1999 to 2002 was 20.0 (18.9) percent using the projected data, compared with 20.0 (18.9) percent using the historical data. There is little difference in the GSEs' average special affordable performance between the projected and historical data.